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Medical Miscellany*

By

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IT IS my great honor and privilege to have the opportunity to speak to you. I do so with enthusiasm and in the belief that there is an increasing need to examine some basic, and perhaps unpopular, issues confronting the medical profession. In short, I suggest that as in the words of Robert Louis Stevenson in his *Dr. Jekyll and Mr. Hyde* we should indulge in "The introspection that a mirror brings." These problems are presented without reluctance or temerity because I believe they are worthy of your consideration and reflection. They are not simple, nor are they to be reduced to algebraic equations with known proven methods of solution. Yet, we must unhesitatingly reckon with important medical issues or it shall be done for us. In the words of the great philosopher Des Cartes, "If there is any possible means of increasing the common wisdom and ability of mankind, it must be sought in medicine." Today we see a realization of this philosophy in our national and international programs of public health. Today, health programs are an immensely important part of our nation's State Department program, of the program of the United Nations and its World Health Organization.

My title, "Medical Miscellany" was selected specifically to provide latitute of expression. I will have fulfilled my purpose here today, and perhaps even my obligation for the courtesy of your invitation and kind attention, if I can but sound the ancient meeting bell so that others too, may assemble to participate in finding solutions and contributing to progress. There is no doubt that reflection coupled with your resourcefulness, will culminate in sound conclusions and solutions.

The Association of Military Surgeons presents a unique audience, for you are a vigorous growing professional organization. Secondly, you are a group of professional people who can and do exert tremendous influence on our national programs and policies. Thirdly, a large number of you are doctors and a doctor's obligations go far beyond a military uniform or Government employment. Leonardo has said, "Truth is the daughter of time and not of authority." It is no mere coincidence or accident of history, that the word doctor comes from the Latin word, docere (doctus), meaning teacher. As physicians, we are and we must be teachers; teachers of humanity, of humane and human relationships, of protection and self-protection, of decency and dignity. As Hippocrates expressed it so eloquently, "Where there is love for humanity, there is also love for the art of medicine." In short, we are teachers of the Golden Rule. Not on a selfish basis or just a self-serving basis, but because we be-

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lieve in the value of human life, the relief of suffering, and the fundamental principles of the Hippocratic Oath.

To be humanitarians, to be good doctors, we must have a love for the "art of medicine"; an appreciation and sympathetic understanding of the individual. It is not enough just to know the diagnosis or to memorize the dose of the proper drug to administer. Indeed, no matter how great the pressures may be, legal or political, we must not forsake the art of medicine. To mechanize medicine is to minimize mercy. To be sure, in the words of Magendie, "Medicine is science in the making" and good medicine is always compatible with good science. But science alone is not necessarily good medicine.

With the fantastically rapid technological advances of the past half-century, there is a growing trend toward conformity. Conformity has subtly become synonomous with normality and individuality is now frequently confused with eccentricity. Some would maintain that this is purely a social problem and, of course, in part it is. Others recognize it as a modern day business problem affecting in no small measure, the degree of success which an individual hopes to achieve or can achieve—and, indeed, it is. But I submit to you that this above all is a fundamental medical problem of prime importance. Recognizing that conformity is absolutely necessary under some circumstances, it, nevertheless, generates pressures and frustrations which are highly detrimental to the individual and the group. When conformity is confused with normality there is trouble ahead—human trouble. It goes far beyond the hospitalization or treatment of the individual. It encompasses such things as initiative, incentive, resourcefulness and creativity. I believe without reservation that our greatest human asset and our greatest hope lies in the creative mind. The entire world's progress, our very civilization, and all of our magnificient technology has but a single source—the creative mind of man. Is this not of extreme medical importance? Are we to forsake our precious role as teachers? Should we not assume the initiative and as doctors, exert our influence, not only with the sick patient, but with our nation's leaders and businessmen to point out the folly and dire consequences of the blind course of conformity? There, unquestionably, is much truth in the quip that "it is not what you eat, but what eats you that gives you ulcers." As physicians we must recognize that our very world leadership depends on our own human resources; not on atomic or space weapons, but on the healthy unfettered state of the minds of the men who created them. In my judgment, this is our real treasure and it is, indeed, a medical responsibility to promote and preserve a milieu where man's mind can continue to flourish and create. To be sure we are interested and dedicated to relieving the ills of man's body, but this worthy objective must be viewed in a broader philosophical sense for the body is but a mechanical vehicle to serve, to protect and to propagate the mind of man. It is the art of medicine which appeals to man's mind and it will always be thus. It is the science of medicine which helps heal, but science alone is not always enough.

Despite our obvious and acknowledged success as a nation, any realistic appraisal of its cost must include the human factor, the individual. If we are to continue to maintain our professional and our national pre-eminence in today's world, we must certainly reckon with the problems which affect the individual adversely. To do less is to relinquish our role as physicians and to contribute to a mediocrity of medicine and a misery of the masses.

With your permission I should like now to discuss some other topics which I believe require re-examination and perhaps corrective action. There was a day when the medical staff was quite directly responsible for the running and operation of the hospital. With increased patient-demands for his time and services, the physician understandably was unable to devote enough time to routine operational hospital matters. As a result we have witnessed the advent and growth of a group of professional hospital administra-

tors. Their services have been and are indeed valuable. Among other things they relieve the physicians from the burdensome task of dealing with a host of tremendous trifles. Unfortunately, however, in some instances it would appear that the hospital administrator no longer considers himself as the operational arm of the hospital whose purpose is to serve physicians and patients as was originally intended. Instead, it is apparent that some administrators consider themselves the operational head of the hospital and the medical staff members are treated, if not considered, as junior executives who are expected to conform and abide by the rules of the administrator. He, in a sense, has become the president of the corporation but apparently has forgotten that the primary purpose of the corporation, that is the hospital, is for the care and convenience of the sick. For example, the specter of the sick, the tense and the anxious patient waiting two or more hours for admission after they were strictly instructed to be at the hospital no later than 2 p.m. is not a happy one. When one perceives that this is standard operating procedure, it happens every day, day after day, there indeed is something wrong. It was not always thus and with rare exception, in time of emergency, it need not be thus. To show you how ludicrous this situation has become and how much the medical profession has relinquished their prerogatives if you will, there are hospitals where the hospital administrator decides whether or not the patients' children may visit. I know of instances where the floor nurse must send a written slip to the hospital administrator's office for his signature before the visitor is admitted. This, it seems to me, to clearly be an invasion of the physician's domain. By what right I wonder, does a lay hospital administrator establish himself as being so competent as to determine who should visit a sick patient. It would be hard to condemn this kind of unwarranted invasion and violation with sufficient vigor.

Lest I sound too severe and against all hospital administrators, many of whom are personal friends, let me hasten to add that the fault is not all theirs. In large measure the medical profession, the doctors themselves, are to blame for the situation they now find objectionable. We are the ones who have failed to exercise control, to make ourselves heard, to forcefully insist that the hospital be run for our convenience and that of our patients, rather than for the convenience of the hired help. There seems to me to be an entirely different order of responsibility in running a hospital than in operating other types of business enterprises. Some of our hospital administrators, obviously, need to be reminded of this fact; and change they must —or be changed. This is primarily a medical profession responsibility and one which should no longer be shirked.

We are all aware of the great shortage of nurses. This is now a problem of national proportions. The nurse is truly an integral member of the health team and it is well said that good nursing is as important as good medicine. But what has happened to nursing care? It has certainly changed in just a few short years. Today one often gets the impression that a bed-bath or a bed-pan is beneath a nurse's dignity. Thank goodness for nurse's aides without whom many of our hospitals would not run. Of course, it is stated that the floor nurse, the staff nurse, just cannot take care of everybody because of the great shortage. She, therefore, must limit herself to only the essential things that require her skill and training. Certainly as a physician, I would be among the first to agree with this, but it is difficult to believe when one finds three or four floor nurses sitting in the chart room gayly engaged in non-medical conversation while the aides are all occupied rendering patient care. Passing the medication tray a few times daily is indeed a poor substitute for good old-fashioned nursing care. The kind of care that brings encouragement, strength, and health to the patient and satisfaction to the nurse.

So that I am not accused of being unknowing, unrealistic, or unjust, let me cite just a few of the examples that have been brought to my attention which involve hospital administrators or nurses. In one nation-

ally known university medical center, a dying man required the use of a laryngoscope. Three times the physician sent the student nurse to the central supply room for a laryngoscope set-up. Three times she came back with a tray so labeled. But each time when the tray was opened it contained a sternal marrow set-up. The patient died. Perhaps death was inevitable, but is this good hospital operation and administration? Should not the doctors demand better performance? In another instance an acutely ill patient in sudden agonizing pain, professing a premonition of death, was left with a nurse's aide while the head floor nurse went back to her charting without ever summoning a physician. Yet another patient experienced angina pectoris when starting for x-ray on the usual hospital stretcher. Gasping for breath and in severe pain, he asked the nurse to stop and let him sit upright; a procedure he knew from experience helped to quickly relieve his pain. Would she? Of course not, it was against the rules for a patient to sit up. What has happened to common sense in nursing? Shortage or no shortage there is no excuse for apathy or incompetence, particularly so in nursing.

These perhaps are unpopular and distasteful topics, but it is now time for the medical profession to re-evaluate and re-assess. I do not present either, just to ridicule or to find fault with nurses or hospital administrators. Rather, they are presented because I have the conviction that the primary deficiency, fault if you will, lies with doctors, the medical profession. In our preoccupation with sick patients, in our unthinking subservience to rank and to protocol, yes, even in our quest for rest, we have been derelict and sometimes have neglected to direct and demand proper care for our patients. It is easier I know to let minor irritations slide, to avoid an issue, not to volunteer. But this is a devastating course to pursue and we are now reaping unwelcome rewards because of our prior defaults. Repeatedly through history we can see the results of appeasement and the sacrifice of principle. Contrariwise, our very strength lies in our moral and ethical standards as physicians. In business, in Government, in private practice, we cannot settle for less and maintain our self-respect or the respect of others. We cannot settle for less and still be good doctors. These problems are, of course, subject to solution and solve them we must if we are to avoid having medicine reduced to the level of craftsmanship. We take great care in severing the umbilical cord of the newborn. We must, with equal diligence, sever the administrative strings which would seemingly desire to make us puppets and our patients prisoners. Perhaps some talented and enterprising physician could crystallize and rapidly help resolve these issues by writing an essay or text entitled, "How to Nurse a Doctor or Vice Versa."

Now I should like to tell you something of the drug industry, the Food and Drug Administration, and medical research. Basic to the Food and Drug Administration and the drug industry is research. All medical progress is dependent upon it as you well know. Certainly the problems of the space age or the atomic age, could not be successfully resolved were it not for the dedicated efforts of many physicians and scientists of all disciplines who have labored with diligence and determination. But much that now is done in the name of research seems to bear small resemblance to the true meaning of the word. For example, I have been told that one non-governmental agency has supported a project entitled, "Douching the Drosophila." Now this seems to me to be a pretty neat trick, but who needs it? Certainly the humble Drosophila has survived and propagated for untold generations without douching. There can hardly be any sizeable drug market for drosophila douche preparations. In fact, I just can't picture the modest little female Drosophila flying up to a drug counter and with a shy hesitant buzz, she conveys her most intimate needs. I, of course, have made jest of this situation and without intention of offense, but I believe it may well serve to sharpen our views of research and the expenditure of public funds for its support. In research we must studiously look for the

obvious. We must not let our thinking or our research become immersed in distractions. There can be no argument against basic or non-applied research. It is the acorn from which the mighty oak doth grow. There are, however, recognizable parameters which characterize good research, important research, respectable research. It is these we must cling to with fervor. We cannot afford the wastefulness of time, talent, or money to pursue the fanciful or the fallacious. We must guard against the plethora of research monies and the obvious public interest in research if we are to use both wisely and if we are to deserve the continuation of both in the future.

By contrast, the American drug industry has performed with phenomenal excellence during the last three decades. In my judgment, one of the best explanations for its achievements lies in our free enterprise system. The profit incentive cannot be underestimated. The reality of conducting research within the limitations of earned profits from prior successess, imposes a degree of critical analysis and competition which has contributed significantly to medical progress and to the health of our people. Here in the drug industry, as almost nowhere else, we can see the value of sound research. Here, indeed, is an essential industry where research is not only the life-blood of the industry, but its hope for the future. I dare say that any drug firm that does not support research will never be a major firm, and any major firm that does not continue to support research will not long be counted among those who count.

In today's world, in yours and mine, the development of a new drug is no mean task. It is no longer a business for amateurs. Let me recount for you some of the work involved because as physicians you have a legitimate and vested interest in the drugs which you are given to use. First, let us postulate that some enterprising chemist or group of chemists has synthesized a new compound or cleverly made a new derivative. This chemical, for it is not yet a medicine, is sent to the biological scientists for screening. In most drug companies the major burden of testing falls upon the pharmacologists. It is they who study the characteristics of this new compound, its site and mode of action. They determine its acute and sub-acute toxicity and attempt to find effective antagonists and synergists for it. Species differences of the drug assume great importance in attempting to predict its action in man. After all the pharmacology, toxicology, and animal physiology data has been accumulated, it is then necessary to decide whether the agent deserves clinical trial in the human. Let us conclude that it does for the sake of illustration. The product is then prepared in suitable form and dosage for clinical use. Cautious firms usually proceed by subjecting the compound to limited clinical trial in a few well-selected patients. The work is most often accomplished by an experienced clinical investigator under carefully controlled hospital conditions. This phase of the work is frequently referred to as human pharmacology. If the compound still looks good, if there are no unexpected adverse species differences in the human, if it is well tolerated, if it still exerts its primary effect demonstrated in the animal pharmacology, then the firm may have a promising compound. At this stage, that is after the human pharmacology is completed with favorable findings, then the preparation usually goes back to the laboratory for extensive and intensive study. This work includes much more pharmacology and in much greater detail, chronic toxicology, studies of compatibilities with other drugs, antidotes, contraindications, and dosage limitations. In well-run firms, it is now and only now that the compound is ready for clinical investigation. It is still a compound, however, not yet a drug. Clinical investigation is carried out by several physicians, usually with major academic affiliation and academic research facilities. Each is chosen by the firm's medical department because of his special interest and special knowledge in some particular disease where this agent may be useful. Here again, patients are carefully selected and treated under a well-controlled hospital environment. There are some major differences however, between this clinical investi-

gation and the earlier human pharmacology. In the first place, there are several investigators working with the compound. The number of patients treated is proportionately greater and as the usefulness and safety of the agent becomes established, it is used investigatively in an ever increasing number of patients and in an ever increasing number of disease conditions. The physicians on the firm's medical staff play a cardinal role in clinical investigation for it is they who must assume a great deal of professional responsibility for the development of any drug. During this phase, it is they who must take the reports of several investigators and attempt to integrate and correlate the group's findings. It is they who must be always vigilant and scrupulously honest to detect the first signs of trouble. At times, difficulty is not apparent in a single series of cases. It is only when the aggregate from several investigators is studiously and meticulously reviewed that trends can be detected. It is the firm's physicians who are responsible for the early and rapid evaluation and exchange of data between investigators. In short, it is the physician in the company's medical department who must decide whether or not this agent is in fact a drug or just another chemical that was tested and found wanting; whether it is safe to use and for what conditions and under what limitations. This medical information must then be transmitted to management in understandable and objective form. There is no room for fudging facts when it comes to drug development.

If the drug has therapeutic advantage, if it has new and valuable effects, if it has a lower incidence of side-effects, if it is a good drug, then management probably will decide to market it. It is at this point that the Food and Drug Administration plays a vital role in protecting the public, the patient, you as doctors, and, in fact, the drug company, too. Since 1938 the New Drug Section of the Federal Food, Drug, and Cosmetic Act, usually referred to as Section 505, has been operational. It, as a matter of Federal law, requires that any manufacturer must obtain an effective new-drug application prior to introducing the drug into interstate commerce. To comply with this section of the law is not easily or casually done. The manufacturer must submit to us:

1. Full reports of all investigations on the the drug. This includes all of the laboratory as well as the clinical reports. It is a Federal offense, incidentally, to delete the unfavorable reports and only submit the good ones. The law states, "full reports."
2. A full list of the articles used as components of such drug.
3. A full statement of the composition of the drug.
4. A full description of the methods used in and the facilities and controls used for the manufacture, processing, and packing of the drug.
5. Samples of the drug, and
6. Specimens of the labeling proposed to be used for the drug.

All of this information when properly documented and collated, constitutes a new-drug application. It is now that the medical and technical staff of our New Drug Branch and our scientific colleagues in other divisions of FDA undertake to review in detail, all of this information. Our primary purpose as required by law, is to determine whether or not in our judgment, the drug is safe for use under the pattern of labeling proposed by the firm. If we conclude that it is, we then file the new-drug application with the Secretary of the Department of Health, Education, and Welfare, and make it "effective." When such is accomplished, the firm is at liberty to market the drug in interstate commerce. If we are not satisfied that the drug is safe for use as recommended, the company is so notified and they, of course, have the opportunity of submitting more substantiating data or otherwise correcting any deficiences.

At our present rate we are now processing about 600 new-drug applications per year, of which approximately 400 are permitted to become effective. I hope it is now clear to you as physicians and others interested in health, that the excellence of our Nation's drug supply is no accident. It represents the co-

operative and laborious efforts of many, many people in industry, in academic life, and in Government. Each has an important role to play, each has much to contribute, each must bear his share of the responsibility for the development and availability of new drugs. To you who are engaged in military medicine, on occasion under the stress of battle conditions, I need not emphasize the life-saving importance of new drugs, of good drugs. The progress of medicine has been in direct proportion to the availability of effective reliable drugs. We are fortunate as physicians, as patients, and as citizens, to have available the best, the safest, and the most advanced drugs in the world.

The word "Miscellany" is defined by Webster as "A mixture of various things, especially a collection of writings on various subjects." In keeping with my title, therefore, I would like to briefly touch one or two other subjects which I believe to be of medical interest. The first is the physician's responsibilities with respect to quackery, and in particular, cancer quackery. There are, of course, many ignorant and misguided individuals who are deceived into believing that Dr. X's secret remedy is just what they need. There are many others who, having tried conventional and orthodox medical care, forsake it. Why should this be so? Obviously, there is no single reason, nor is this a problem ever to be completely eradicated. I am firmly of the conviction, however, that we, the medical profession, can be more effective in discouraging our patients from resorting to the unorthodox, the unsubstantiated and the unethical. This, it seems to me, is our moral responsibility to our patients, to their families and to our profession. People, our patients, must be taught the dangers of the quack. He is, indeed, a thief who cares less about your life than your money! Even those who would seemingly appear to be benign, in fact are not. The food-fadist dealing in half-truths, in quasi-scientific terminology, and always in products designed to take your money, is no less a menace to the public and to the public health than is the phoney device salesman. Both profess the prevention or cure of disease. Both deal in money and misery. Both conceive and deceive, without conscience. We the medical profession, can no longer afford to ignore these charlatans. Our genuine interest for the public health, our leadership in health, remains unchallenged, but we now must exercise the full responsibilities which leadership brings. It is for this reason that the American Medical Association and the Food and Drug Administration have recently embarked on a joint national program against food fadists and nutritional quackery. You, too, must help. This is, among other things, a problem of education.

Let me now return, however, to the cancer quack, probably the most ruthless of all. Why does he flourish? There is just one reason—he sells hope!—and hope, my friends, is paramount to those who have been told there is no hope. The motto of the Department of Health, Education, and Welfare is, "Hope, the anchor of life." It certainly is for all of us, even in good health; think then what hope means to those who have nowhere else to turn, to those who feel neglected and set adrift because they have been told "there is nothing else we can do." Many of us in the profession have probably been guilty of contributing to the cancer quacks' success. Admittedly, his "hope for sale" is false hope. We cannot forsake the truth as he so willingly does, but this is not an adequate answer. Physicians themselves become discouraged with the hopelessness of terminal cancer patients, and this is quite understandable to anyone with even an ounce of human compassion. But this, too, is not an adequate answer. We must search further. We must re-examine our approach and our methods of terminal cancer care. We must legitimately employ the psychology of hope. We need to learn more of the psychology of death. When hope is replaced by fear, we have failed to be good doctors. These are clinical problems and are just as important to the terminal patient and his family as the correct diagnosis was in the first place, perhaps even more so. It is essential, therefore, that the medical profession does what is

necessary and constructive for the morale of the terminal patient, if he is to be saved from a fate worse than death—robbery and untold human torture done in the name of hope by the cancer quack.

Now if I may, I should like to close this presentation with a short essay which might be entitled, "Who are We?"

As the science of medicine progresses, we are gaining great chunks of knowledge. No where is this more apparent than in the area of mental and emotional disorders. In somatic medicine we long ago accepted the evidence for the biochemical basis of disease. Important observations and findings in the realm of mental health give promise of the biochemical etiology of mental disease. Could it be then that we are victims, that we are prisoners of our biochemistry? If so, if we are truly prisoners, then the great moral question, the great medical question is "What is the extent of personal responsibility?"

In a discussion between two distinguished religious leaders it was said, "The fundamental tenet of Christianity holds that if you think right you will act right." Whereas the fundamental tenet of Judaism holds that "If you act right you will think right." Perhaps these two great religious concepts are not in conflict, but how can either be reconciled with emotional disease? How can either be reconciled with our new biochemical facts? Thoughts and ideas in themselves must be biochemical. Is it not hard to imagine them as completely abstract, coming from nowhere, having no being, no cause and effect, no demonstrable basis, except their existence? Certainly as physicians dedicated to science we must adhere to the factual, to the biochemical and the physicochemical approach. Our increasing knowledge forces us now to reappraise. Who are we? Are we just a series of biochemical reactions? If we are, then should not the drug addict be relieved of his criminal designation? Is he not sick? Is there some special reason that he, too, is not a victim of his biochemistry? We recognize the biochemical basis for the urge to propagate. It is no less manifest in man than in other animals. Yet we seem to be slow in relinquishing our ancient beliefs in magic when it comes to man's mind. Even the most skeptic must bow or be bigoted when confronted with facts. Only time and further work will provide the answers we seek. But the medical profession and society, must be prepared to intelligently meet the great questions to be raised by continuing study. Is man's mind his own? Is it a function of his biochemistry or does it belong to the ages? In truth—who are we?

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The Science Writer and the Doctor*

By
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I WAS very much interested in the choice of the theme for this year's meeting of your distinguished group—"Dynamic Medicine in the Space Age."

And my only hope is that the implied desire of doctors to become dynamos as regards meeting the medical needs of man in interplanetary space means also that more doctors intend to be more dynamic than heretofore in meeting a problem that has long pre-dated the era of Sputniks, satellites and spaceships.

And that is the problem of better communication between science, especially medical science, and the general public—particularly through the medium of the public press.

It's somewhat ironic to realize that at a time when scientists are talking confidently of the possibility of maintaining radio contact with a space vehicle a million miles beyond the moon, some doctors are still gun-shy of communicating medical information through newspapers to folks in their own home town.

It's praiseworthy to note your interest in finding means to protect future space explorers from the potential hazards of radiation, weightlessness, extremes of cold and heat, and isolation as they gad about among the planets. And I might add that this is right in line with the traditional efforts and accomplishments of medicine in safeguarding the health of people right here on earth.

But I also maintain that medicine's present job on our own planet could be better done if more information on health and preventive medicine were transmitted to the public. A public that is better informed about the things of health is better able to protect its health.

Also, a public that is better informed about research in the medical field is more prone to understand the need for giving it the financial support it needs to flourish.

It follows that the doctor himself is benefited in two ways if the public has better understanding of medicine. First, such people are more prone to seek a doctor's help at an earlier time than they might otherwise—thus giving the doctor a better opportunity to meet the problem. Secondly, increased public financial support for research helps open up new avenues for the doctor to augment his skill. I'll touch upon both these points later.

But first, let us explore the basis for this problem of communication between medicine and the public, and how we might attempt to cope with it.

Of course, the situation is by no means as bad as one that is illustrated by the story of a man who called a hospital to inquire about a patient named Goldberg.

As the story goes, the operator switched the call to the nurse on the fourth floor. "Yes," said the nurse, "we have a Mr. Goldberg. His operation was successful, his fever is gone, he'll be on solid foods for two days and will be released in about a week. May I tell him who called?"

"Don't bother," said the voice on the other end of the wire. "This *is* Goldberg. Nobody tells me what's going on around here, so I thought I'd 'phone and find out how I'm doing!"

As I say, the communication system is not that bad. Doctors and medical researchers as a group transmit a great deal of information through the press to the public. But there are still too many individual doctors who say there's no value in giving the public a lot of medical information through the press—too many, indeed who say the public really has no right to know. There are still too many individual doctors who believe that the

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only information the public should get beyond that involved in a treatment is that which is spoon-fed to them in small doses in a doctor's office, often in vague generalities or in terms too technical for people to understand.

There are still too many who believe that the press can not get anything in the medical or other science field straight, and that the press is dedicated to nothing but sensationalism and stepping up the sale of newspapers and the sale of radio or television time.

Happily, the number of these diehards is small in all instances. Happily, too, their number is growing smaller all the time as increased understanding and cooperation is achieved between medicine and the press.

The fact that you did me the honor of inviting me to appear on your program is evidence in itself of a steadily growing effort on the part of medicine to meet the press halfway and to share in what, after all, is a mutual responsibility, with obligations on both sides. And I might say right here that the press realizes that it has been to blame for a share of the rhubarbs and donnybrooks that have occurred, and still do at times, between medicine and the press.

It's not so long ago that the appearance of a newspaper reporter on the program of a scientific meeting would have been as improbable as the appearance of a strip-tease act.

I daresay there are some people in the audience who can recall the time when most scientists, especially those in the medical field, would almost rather face a firing squad than talk to a reporter, let alone listen to one make a public speech. And reporters, and their newspapers, some 20 to 25 years ago were, for the most part, just as bad.

Just as scientists and medical doctors looked upon newsmen as rather shady, inaccurate characters who couldn't be trusted as far as you could toss an X-ray machine, so too did reporters and their newspapers have some bizarre ideas about scientists. They looked upon them as queer birds, caricatured them as absentminded professors who lived in ivory towers, stroking long grey beards. And, many of the stories about science and medicine were of the screwball variety—kidding the language of science and the methods of science, rather than making a sincere effort to understand and interpret them.

But the scientists had themselves to blame for a lot of this unhappy situation—unhappy because it was depriving the general public of something that was intensely interesting, educational, and even exciting, to say nothing of being potentially beneficial from a public health standpoint. Many scientists did maintain an ivory tower existence, having no patience even with the occasional newsman who had a legitimate interest in the doings of science and who asked sincere, even though somewhat faltering, questions.

But newspapers gradually learned that science could be handled on a day-by-day basis and treated as straight news, just like any other activity, from politics to religion. And more and more scientists began to realize that more and more reporters could write science news accurately. The rise of an organization known as the National Association of Science Writers has been a key factor in this change. The NASW is dedicated to promoting the accurate reporting of science and medical news.

Incidentally, the growth of the NASW—from some 25 pioneering members in 1934 to well over 150 active newspaper and magazine science writers at present—is an indication of the interest taken by laymen's publications in developing specialists in this field. In addition, the NASW includes in its membership, as associate members, science-writing specialists associated with hospitals, universities and industrial concerns, including pharmaceutical houses.

Yes, much progress has been made during the past 25 years or so, but science, including medicine, and the press still are not exactly lovey-dovey, nor do they constitute a mutual admiration society. There are numerous exceptions, of course. Some doctors and some reporters see completely eye-to-eye on how

medical news should be handled, but others don't, and there still are enough squabbles and misunderstandings to indicate that there's room for improvement on both sides.

But, what are the specific criticisms that some doctors still make of the press?

We often hear the charge that the press is guilty of publicizing premature announcements and overoptimistic claims in the medical field and that the press does not exhibit enough judgment and discrimination in handling such stories.

This should be remembered: The press, in reporting any such story, is quoting a doctor. And, if he gives his views at a legitimate medical meeting, in a legitimate scientific publication—or, in the case of a doctor being interviewed, if he is at least reasonably well known—we can only assume that his views are proper for publication, regardless of whether one happens to agree with them.

Science reporters do not work in laboratories or operating rooms themselves; therefore we are in no position to censor a doctor's statements as to their validity except in instances where they might run contrary to something we know to have been previously published. In that event, we can—and do—present the contrary viewpoint or evidence.

When the subject matter appears open to challenge, a reporter has an obligation to see whether a responsible authority in the particular field cares to make a comment so that both views can be aired in the same story. And a good reporter will do just that.

But, sometimes, we do not get to first base by seeking such comment. We may contact a source who takes a dim view of what a given scientist has reported, but he is unwilling to be quoted to that effect. He has a hunch that the first man is off key, but he has no evidence to the contrary other than the fact that such and such a development hasn't been reported before. He may even grant that there's always a chance that the first man may be right—so, where does that leave the press.

It doesn't do any good to stew and fret about such things at private medical meetings or in informal conversations with newsmen. If you think a researcher is cock-eyed and has made some announcement prematurely, and you have good reason to challenge him, call the same newspaper that has published the story. I'm sure you'll find the editor happy to consider running a statement under your name.

Obvious charlatans and quacks are quite another thing. Newspapers are not so dumb. They are pretty experienced in recognizing phonies or the obvious publicity-seeker, whether he is in the medical or any other field.

Another thing: If a patient shows you some clipping from a newspaper or magazine article on a medical subject, don't just dismiss it with the statement, "That's just a lot of newspaper talk." Look into the thing. Find out the source of the reported information and check it with other authorities if you are not satisfied. It well might be something that you missed in a medical journal which you did not have time to read.

For, if you just deride it to your patients—and then it turns out to be something really good which you could have used on such patients earlier—you will just drop a notch in their estimation. On the other hand, if it turns out to be a false alarm, you will have gained stature with your patient for having taken the trouble to investigate.

I agree that carelessness as to facts in a news story can be serious indeed where patients are concerned. And, if a wire service or newspaper incorrectly quotes a source—and therefore gives the wrong impression, such as an unjustified hope—the wire service or newspaper is then the guilty party, and you have every right to jump on them.

Certainly, we make mistakes, but so does a doctor sometimes in his work. The difference is, our errors are open for all to see and condemn, just like the left fielder who muffs the long ball with the bases loaded, whereas the human errors of a doctor in diagnosis, and worse, are not always brought out into the open.

Some doctors appear to demand far more

accuracy from newsmen than they do from their own colleagues. They'll dismiss a muffed diagnosis as "the best clinical judgment," but if a science reporter makes a blooper, they're quick to blast him.

The charge is still made today by some doctors that newspapers by and large are interested only in the "sensational." True, there are some instances where a story is juiced up in rather lurid fashion, but nowadays they are pretty isolated. The very large majority of newspapers realize that a medical story need not promise a cure a week from Tuesday in order to be interesting to the public. I could count on the fingers of my hands the stories I have written in the past 15 years reporting or promising "cures" for anything.

Some doctors feel that a newspaper is no place to discuss medical things, that a doctor can tell his patients all they need to know. Newspapers aren't in the business of trying to practice medicine, thus interfering with the field of the doctors. But they know that medicine is news, that people are interested in their health and their ailments and like to read and talk about them. Various surveys have shown that medical news ranks high among the preferences of readers as they read their newspapers or magazines.

And, newspapers contend that in a democracy people have a right to all the information they can get on every possible subject, be it politics or pellagra, labor strife or leukemia, tornadoes or tonsillitis.

Some doctors contend that a physician has enough to do tending his patients without feeling any obligation to help generate or encourage the publication of medical news. But such doctors should remember this: Advances in medical research are depending more and more on public support, either through direct contributions or tax-supported grants-in-aid programs. The day of big support by wealthy philanthropists is pretty well a thing of the past.

Thus, to be a better and better doctor, you need the advantages of new and better research efforts, and support for these must come largely from the public. And a public that is well-informed about medicine and its possibilities is much more apt to loosen its purse strings in support of research.

While it is true that a doctor may be able to tell his patients all they need to know while they are under his direct care, there are periods when people are not under such direct care, and when the principles of preventive medicine are important. A newspaper or magazine, quoting responsible authorities, can alert people to the danger signals of such ailments as cancer and diabetes, perhaps bringing such people to a doctor sooner than otherwise.

Speaking of quoting responsible authorities, I am reminded of another difficulty posed by doctors regarding the transmission of medical news. Some doctors, even including some of those who are otherwise cooperative with reporters, are gunshy about the use of their names in stories, mostly for fear of being branded by their colleagues as publicity seekers, courting advertisement.

But newspapers need to use names in fairness to the reader who wants to know whether what he is reading comes from a reliable and authentic source or whether it is something someone may have just dreamed up. Intelligent doctors would be among the first to howl if newspaper stories on some controversial political issue failed to name the people who were sounding off, yet some of them still think that medical stories can and should be presented anonymously.

Incidentally, one of my colleagues once remarked facetiously that apparently about the only physician around Washington who doesn't seem to mind having his name used regularly in the paper is Dr. A. Magruder MacDonald, the coroner!

Another "beef" by some doctors about newspaper medical stories is that they tend to play up the dramatic phases and sometimes place the emphasis on some point that may have been given only minor consideration by the doctor in making his technical report.

Well, why not? The job of the reporter is to make his story as interesting and readable

as he can, and, if there are dramatic or even bizarre angles to the subject matter, he is certainly going to use them. As long as he gets his facts straight—and that is the responsibility he must always keep in mind—he intends to use every trick in his bag to keep the reader interested, to say nothing of the editor who decides whether his story gets into the paper.

Science reporters are writing for the general public, NOT for scientists, so doctors should appreciate that the news story can not employ the same technique of presentation as the article in a technical journal. And, by the way, articles in technical journals might profit by using the newspaper technique of writing in simple, non-technical language—and using attention-holding tricks at the beginning of the article. Science is getting so specialized these days that it must be tough, for example, for the biologist to know what the physicist is talking about, and vice versa.

In connection with an obligation to get facts straight, newspapers have, it seems to me, an obligation to train more men in the specialized field of science and medicine in these days when science has become so much a part of our daily lives. Some papers have been doing just that, but more remains to be done.

And they don't necessarily have to have PhD's on their staff to do so. A good science writer must first of all be a good all around reporter who got his early training chasing fire engines, buttonholing ward bosses at city hall, and covering luncheon meetings of the Kiwanis club. Most of the top science writers in the country today began that way, and it's helped them keep down to earth in their writing.

But the guy who is suddenly drafted from the police beat to cover the penicillin front is going to need help, no matter how keen his news sense may be, and no matter how skilled a journalistic craftsman he is. He will need to get help from his paper by getting the time to bone up on his new field—perhaps even take some courses—and time to develop contacts.

Doctors can also help out by being patient and tolerant with the neophyte. Give him the low-down on what you're doing and try to put your scientific jargon into everyday English—even though you might have to sacrifice the sacredness of science's accuracy by just a wee bit.

In this latter connection, keep in mind the possible pitfalls of scientific jargon for the layman by remembering the legend of the immigrant plumber who is supposed to have written a letter to the National Bureau of Standards on the subject of hydrochloric acid.

The plumber, whose command of English was not so good, wrote the Bureau that he had found hydrochloric acid to be good for quickly opening clogged drainage pipes, and he simply wanted to confirm with experts that he was doing the right thing.

Back from the bureau came this reply: "The efficacy of HCL is indisputable, but the corrosive residue is incompatible with metallic permanence."

The plumber then wrote a thank-you note to the bureau, saying he was glad he was doing the right thing and would continue to pour HCL into drain pipes.

This caused consternation out at the bureau, so another letter was written—by a higher up scientist—issuing a sterner warning, but still couching it in gobbledygook.

Again the plumber wrote back, saying he heartily agreed with the Bureau that HCL was just about the slickest thing he had seen.

That did it. A real top boss at the bureau, throwing science's sacred language to the winds, dashed off this masterpiece: "Don't use hydrochloric acid. It eats hell out of the pipes!"

In summary, then, of my attempts to cover the subject of "The Science Writer and the Doctor," it appears that the problem of providing plentiful and accurate medical information for the public is a two-way thing, with obligations falling upon both the doctor and the newsman.

If I have offered some points of criticism of some of the boys within your lodge, the

intention has been constructive. And I find it difficult to be critical, even to this degree, of a profession which has produced insulin, penicillin and a polio vaccine.

We in the newspaper field have our rascals and irresponsibles, just as you have them in the medical field, and just as they exist in every line of human endeavor. But my strong belief is that they don't last long after they are found out, in the same way that responsible medical organizations seek to weed out their wrong-doers.

In journalism, we don't have any oath to Hippocrates as much, but our ethics are just as high as those of medicine, and, by Hippocrates, we intend to keep them that way.

1300 Connecticut Ave., N.W.
Washington 6, D.C.

ADVISORY COUNCIL (MEDICAL) ON RESERVE FORCES

U. S. Army Photo

Seated (L to R)—Maj. Gen. Silas B. Hays, The Surgeon General, U. S. Army; Brig. Gen. Perrin H. Long, MC, USAR; Maj. Gen. James P. Cooney, Deputy Surgeon General, U. S. Army.
Standing (L to R)—Col. James H. Kidder, MC, USAR; Brig. Gen. Alexander Marble; MC, USAR; Brig. Gen. Harold G. Scheie, MC, USAR; Brig. Gen. Frank E. Wilson, MC, USAR; Brig. Gen. Manfred U. Prescott, MC, USAR; Brig. Gen. Harold C. Lueth, MC, USAR; Brig. Gen. Truman G. Blocker, Jr., MC, USAR; Brig. Gen. Carl S. Junkermann, MC, USAR; Brig. Gen. Thomas P. Fox, MC, USAR; Brig. Gen. Joseph M. Bosworth, MC, USAR; Brig. Gen. James B. Mason, MC, USAR (Ret.).

A Quantitative Method of Estimating Flexion and Extension of the Spine—A Preliminary Report

By
MARTIN ISRAEL, M.D.*

THE Weber Brothers[1] in their book and its accompanying atlas, published in 1836, reproduce an outline of the spinal column which shows clearly the relationship of the vertebral bodies, the intervertebral spaces, the spinous processes and the pelvis. They removed the soft structures, making certain that the relationship of the spine and pelvis remained intact. The specimen was enclosed in plaster of Paris, allowed to harden, and a sagittal section was made. The inclination of the pelvic inlet and outlet were measured. The height of the vertebral bodies, the thickness of the discs and the height of the discs at the center portion were all measured and recorded.

They added up the height of the discs and they arrived at a definite sum for each area of the spine—cervical, dorsal and lumbar. They also measured the respective diameters of the discs in the cervical, thoracic and lumbar spines. They then determined the proportionate elasticity of the discs mathematically, with the following results: 846, 297, 298, cervical thoracic and lumbar respectively. Thus, they state, according to the proportionate elasticity of the discs, flexion of the thoracic and lumbar spines are almost the same, even though the length of the thoracic and lumbar spines differ. They also state that flexion of the cervical spine is almost three times greater than either the thoracic or lumbar spine, even though the cervical spine is shorter in length than the thoracic spine or the lumbar spine. They make it clear that flexion of the spine does not depend on elasticity of the discs alone, but that one must also take into consideration motion of the apophyseal joints of the spinal column.

Tanz[2] made a roentgenographic study of motion of the lumbar spine. He used the method outlined by Begg and Falconer.[3] This method consists essentially of taking an X-ray film of the lumbar spine in extension, and another view in flexion. The film taken in extension is placed on a horizontal viewing box, and a sheet of paper is placed on its upper portion, and fixed in place with a weight. Then the film taken in flexion is placed on top of the paper and the film in extension, so that the outlines of the sacrum coincide in both films. A pencil line is drawn along the top margin of the upper film to form a baseline on the sheet of paper. The shadows of the fifth lumbar vertebrae are then adjusted to coincide, and a pencil line again drawn on the top margin of the upper film. The process is repeated for each vertebra, and the angles between successive lines on the paper indicate the amount of movement taking place at each interspace.

Kottke and Lester[4] developed a fluoroscopic intensifier which makes possible the use of cinematographic recording of cervical vertebrae during motion. This apparatus exposes the patient to less radiation than does an ordinary fluoroscopic examination. The authors state that before this technic can be used to the fullest value, standards of normal variations of vertebral motion will have to be established as a basis for evaluating abnormal cervical motion.

Harris[5] developed a simple posture meter for recording progress in the treatment of rheumatoid spondylitis. It consists of an upright, 6 feet 3 inches high, made of wood (3 inches by 2 inches in cross section) and mounted on a wooden base. Horizontal holes are bored through it, each hole having a diameter of 3/16 inch with centers 3 inches apart. Through these wooden holes wooden rods are inserted. The rods are graduated in ½ inches and they vary in length, the longest projecting 18 inches from the upright. Rub-

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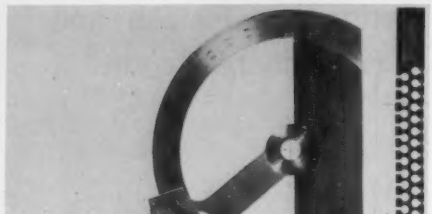

FIG. 1. (Left) Dietzgen V 1978 protractor; (Right) Kueffel and Esser Fexion curve rule

ber caps are placed at both ends of the rods. Heel holds are fitted in the base of the upright. The subject stands on the platform, heels in the heel hold, and he assumes the best posture which he can attain. The rods are pushed through to press against the vertebral column and the back of the head. Then the patient steps off the platform, the distance by which each rod protrudes is noted, and the spinal profile is plotted on graph paper. Harris states that this method does not exclude knee and hip deformity, but nevertheless it does provide a useful record of the patient's best standing position.

MATERIAL AND METHOD

The instruments used in my method are the Keuffel & Esser flexible curve rule 18 inches in length* and Dietzgen's V 1978 protractor† (Fig. 1). The curve rule is so constructed that it will shape easily to fit any curve. The curve rule is then applied to paper and the curve is reproduced by drawing it with a pen or pencil. The V 1978 protractor is graduated in ½ degrees. It has a Vernier arm which allows for a reading in minutes.

The subjects in this study are 10 female ballet dancers ranging in age from 18 to 23. The subjects are seated on an examining table with a chair or stool placed under both feet. All examinations are made with the examiner to the left of the patient, so that the left profile is obtained in all curves. The rationale for this procedure is that all physical examinations are conducted with the examiner standing to the left of the patient. The spine is divided into three segments for purposes of this study: the lumbosacral segment, the thoracic segment, and the cervicothoracic segment.

The following postures are assumed in studying all three segments of the spine:

1. The normal sitting posture in all three segments of the spine,
2. Flexion of the hips in the lumbosacral spine and the thoracic spine,
3. Flexion of the head in the cervicothoracic spine,
4. The erect posture in all three segments of the spine.

The curve rule is shaped to fit the particu-

FIG. 2. Application of flexible curve rule. Thoracic spine. Flexion of the hips.

* Keuffel & Esser flexible curve rule with transparent edge. Catalogue #1924—18. The approximate cost at this present writing is $8.00. Keuffel & Esser Co., 127 Fulton St., New York City.

† Dietzgen's V 1978 protractor. Catalog #V 1978. The approximate cost at this present writing is $39.00. Eugene Dietzgen Co., Inc., 218 East 23rd St., New York City.

lar part of the spine to be measured (Fig. 2) and then the curve is reproduced on paper with pen or pencil (Fig. 3). Tangents are drawn from the ends of the curve. Where the tangents intersect, the acute angle is measured (Fig. 3) using Dietzgen's V 1978 protractor. The results are illustrated in Fig. 4. Here we see a subject in the normal sitting posture. The curve of the cervicothoracic spine obtained with the curve rule is drawn and the tangents to the curve are shown. The artist has deliberately exaggerated the thicknesses of the lines of the curve and the tangents for purposes of illustration and photography. Nevertheless there is a reasonable approximation of the curve and the tangents actually found in this case, and the angle of intersection measures 22 degrees and 55 minutes.

FIG. 3.

CF—curve with convexity forward, left profile
CB—curve with convexity backward, left profile

Tangents are shown and the angle of intersection indicated in each case.

In the lumbosacral spine, normal sitting posture, the convexity was found to be either forward or backward.

In the lumbosacral spine, erect sitting posture, the convexity was forward in 9 cases, backward in 1 case.

In the lumbosacral spine, flexion of the hips sitting, and in all positions of the thoracic spine and cervicothoracic spine, the convexity was found to be backward.

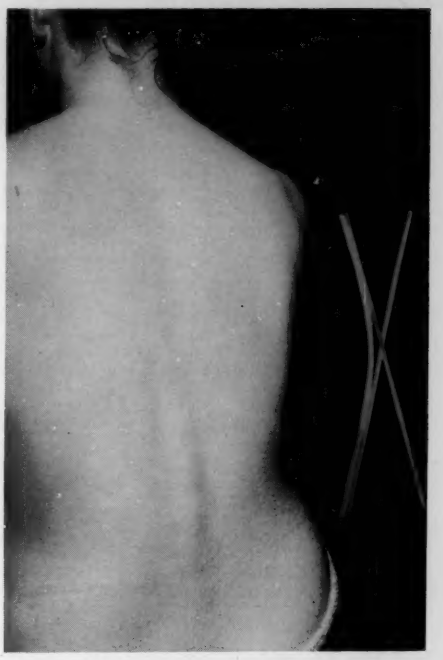

FIG. 4. Left profile, cervicothoracic spine. Normal sitting posture. 22°55'

The cervicothoracic curve was obtained by placing the curve rule along the tips of the spinous processes from the base of the skull to the 6th thoracic vertebra. The peak of the curve is in the vicinity of the vertebra prominens.

The curve of the thoracic spine was obtained by placing the curve rule along the tips of the spinous processes from the 1st to the 12th thoracic vertebrae.

The lumbosacral curve was obtained by placing the curve rule along the tips of the spinous processes from the 1st lumbar vertebra to the end of the sacrum. The peak of the curve is in the region of the lumbosacral joint.

There are 9 measurements for each subject, numbered as follows:

1—Lumbosacral spine, normal sitting posture.

TABLE 1

TABULATION OF RESULTS

Measurement of normal sitting posture, flexion and extension of the lumbosacral, thoracic and cervicothoracic spine of 10 Female Ballet Dancers (*Left Profile*)

Sub-	Age	Height	Weight*	Years†	1	2	3	4	5	6	7	8	9
MM	20	5′6″	126	5	CF** 6°30′	CB** 22°12′	CF** 15°0′	16°45′	36°45′	10°51′	22°55′	47°7′	20°14′
Mde B	20	5′5½″	134	7	CB 4°19′	CB 18°26′	CF 9°22′	16°12′	40°53′	20°39′	23°12′	55°38′	22°45′
GG	20	5′9″	139¾	6	CB 6°41′	CB 21°21′	CF 20°31′	12°37′	23°4′	13°15′	20°36′	47°54′	20°37′
EC	18	5′2½″	122½	6	CF 2°21′	CB 12°52′	CF 17°33′	17°5′	22°54′	13°33′	7°52′	37°24′	8°38′
DS	18	5′2″	117	10	CB 6°50′	CB 20°6′	CF 11°40′	18°24′	46°7′	15°48′	21°31′	56°24′	25°30′
BT	18	5′6″	120¾	11	CF 5°5′	CB 19°38′	CF 6°24′	29°23′	47°8′	23°22′	10°51′	45°7′	14°23′
BS	22	5′5″	128¼	10	CF 34°11′	CB 23°47′	CF 40°21′	23°3′	28°35′	21°21′	21°44′	48°25′	30°45′
FB	21½	5′1½″	118¾	6	CB 3°19′	CB 28°44′	CF 10°20′	27°25′	44°22′	20°31′	23°21′	43°25′	21°0′
LH	23	5′6″	124¾	18	CB 6°8′	CB 31°25′	CF 6°43′	21°41′	41°22′	18°36′	27°14′	60°17′	25°5′
JC	22	5′3¾″	121¼	9	CB 6°45′	CB 26°27′	CB 7°24′	19°40′	45°19′	16°8′	21°0′	54°49′	21°55′

* Weight in pounds.
† Years in ballet.
1—Lumbosacral spine, normal sitting posture.
2—Lumbosacral spine, flexion of the hips sitting.
3—Lumbosacral spine, erect posture sitting.
4—Thoracic spine, normal sitting posture.
5—Thoracic spine, flexion of the hips sitting.
6—Thoracic spine, erect posture sitting.
7—Cervicothoracic spine, normal sitting posture.
8—Cervicothoracic spine, flexion of the head.
9—Cervicothoracic spine, erect posture sitting.
** CF—Convexity forward; CB—Convexit y backward.

2—Lumbosacral spine, flexion of the hips sitting.
3—Lumbosacral spine, erect posture sitting.
4—Thoracic spine, normal sitting posture.
5—Thoracic spine, flexion of the hips sitting.
6—Thoracic spine, erect posture sitting.
7—Cervicothoracic spine, normal sitting posture.
8—Cervicothoracic spine, flexion of the head.
9—Cervicothoracic spine, erect posture sitting.

FINDINGS

Examination of Table 1, Column 1—lumbosacral spine, normal sitting posture—reveals that 4 cases (MM, EC, BT, BS) show a convexity forward, the remaining 6 cases show a convexity backward.

Examination of Table 1, Column 2—lumbosacral spine, flexion of the hips sitting, reveals that all cases show a convexity backward.

Examination of Table 1, Column 3—lumbosacral spine, erect posture sitting, reveals that 9 cases show a convexity forward and 1 case (JC) shows a convexity backward.

The 7th subject, BS, in Table 1, column 1 shows a reading of 34°11′CF. Table 2, column 1 gives the mean for this position as 1°25′CF. The standard deviation for this position is 11°36′. Therefore the reading in this case is three times the standard devi-

TABLE 2

THE MEAN AND STANDARD DEVIATION FOR EACH POSITION

	1	2	3	4	5	6	7	8	9
Mean	1°25′CF*	22°29′	13°9′CF	20°13′	37°37′	17°23′	20°2′	49°38′	21°5′
Standard Deviation	11°36′	5°6′	11°42′	4°57′	8°56′	3°53′	5°39′	6°39′	5°46′

1—Lumbosacral spine, normal sitting posture.
2—Lumbosacral spine, flexion of the hips sitting.
3—Lumbosacral spine, erect posture sitting.
4—Thoracic spine, normal sitting posture.
5—Thoracic spine, flexion of the hips sitting.
6—Thoracic spine, erect posture sitting.
7—Cervicothoracic spine, normal sitting posture.
8—Cervicothoracic spine, flexion of the head.
9—Cervicothoracic spine, erect posture sitting.
* CF—Convexity forward, positions 1 and 3. In all other positions the convexity is backward.

ation for this particular position, which causes one to regard this particular measurement as a rare extreme.

In this same individual, BS, in Table 1, column 3, the reading is 40°21′CF. In Table 2, column 3, the mean for this position is 13°9′ and the standard deviation is 11°42′, giving us a value about 2½ times the standard deviation for this particular position, and again indicating a rare extreme.

Examination of Table 2, column 4—thoracic spine, normal sitting posture, reveals that the mean for this position is 20°13′. Examination of Table 2, column 6—thoracic spine, erect posture sitting, reveals that the mean for this position is 17°23′, showing a decrease in curvature of the thoracic spine in the erect posture, sitting, as compared with the normal sitting posture. Examination of Table 1—these same columns—4 and 6, reveals 2 execeptions to this general observation—MdeB and GG. In these two cases there is an increase in curvature of the thoracic spine in the erect posture, as compared with the normal sitting posture.

Examination of Table 2, column 7—Cervicothoracic spine, normal sitting posture, reveals that the mean for this position is 20°2′. Examination of Table 2, column 9—Cervicothoracic spine, erect posture sitting, reveals that the mean for this position is 21°5′. Therefore there is an increase of curvature in the cervicothoracic spine in the erect posture, as compared with the normal sitting posture. Examination of Table 1—these same columns—7 and 9, reveals 3 exceptions to this general observation—MM, MdeB, LH. In these three cases there is a decrease of curvature of the cervicothoracic spine in the erect sitting posture, as compared with the normal sitting posture. In one case, GG, there is practically no change in curvature in the cervicothoracic spine in the erect sitting posture, as compared with the normal sitting posture.

Examination of Table 3 reveals the mean range of motion for all three segments of the spine—the complete range of motion between flexion and the erect sitting posture. The mean range of motion for the lumbosacral spine is 35°38′, and the mean range of motion for thoracic spine is 20°14′. We may assume, therefore that the mean range of motion is greater in the lumbosacral spine than in the thoracic spine. The mean range of

TABLE 3

THE MEAN RANGE OF MOTION

Lumbosacral spine	35°38′
Thoracic spine	20°14′
Cervicothoracic spine	28°33′

motion for the cervicothoracic spine is given as 28°33′. Comparison of the mean range of motion of the lumbosacral spine and the thoracic spine is anatomically in order, because in both cases we are dealing with the same anatomical range of motion—between flexion of the hips, and the erect sitting posture. However in the case of the cervicothoracic spine, the anatomical range of motion is different in that we are dealing with flexion of the head. We may state, therefore, that bearing the anatomical difference in mind, this study would indicate that the mean range of motion of the cervicothoracic spine is intermediate between that of the lumbosacral spine and the thoracic spine.

Discussion

According to manufacturers of surveying instruments,[6] where a curved road is to be constructed, engineers establish tangents. Where the tangents intersect, or the point of intersection, the angle is measured, and from the point of intersection the curve is established.

The method described in this study for measuring flexion and extension of the spine is analogous to the method used by surveying engineers for establishing a curved road. The angle formed by intersecting tangents changes as the curve of the particular segment of the spine changes with flexion and extension.

This method can only be applied to measurements of flexion and extension of the spine. It is not applicable to the usual measurements of goniometry, where angles are measured to indicate the angular relationship of the two linear anatomical parts comprising a joint, either in flexion or extension, or in rotary movements.

It is necessary to establish standards of normal variations of flexion and extension of the spinal segments in all age groups as a basis for evaluating abnormal flexion and extension of the spine.

Conclusion

A quantitative method for estimation of spinal flexion and extension is presented. The method essentially consists of establishing tangents from a drawing of the curve of the spine and measuring the acute angle of the point of intersection of the tangents. This angle is characteristic of the particular curve that is under examination.

A series of 10 female ballet dancers ranging in age from 18 to 23 was studied using this method.

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AERO MEDICAL ASSOCIATION MEETING

The 30th annual meeting of the Aero Medical Association will be held at the Statler Hilton Hotel, Los Angeles, California, April 27-29, 1959. The General Chairman is Charles L. Barron, M.D., Lockheed Aircraft Corporation. Retirement credit points will be granted for attendance.

The Diagnosis of Paragonimiasis Westermani Using Purified Antigens in Intradermal and Complement Fixation Tests*

By

E. H. Sadun, Sc.D.,† Alfred A. Buck, M.D.,†† and Bryce C. Walton, Ph.D.‡

RECENT studies indicate that the prevalence and the public health significance of paragonimiasis in the Far East are greater than previously estimated (Yokogawa *et al.*, 1955; Vajrasthira *et al.*, 1957; Sadun, 1958). In Korea, this infection is endemic in every province and it constitutes a major medical military problem.

Since the clinical picture of paragonimiasis is not well defined, an unequivocal diagnosis of this infection depends on the recovery of *Paragonimus* eggs from the sputum or feces. The recovery of eggs, however, is very difficult and often impossible, in extrapulmonary infections and in typical cases which are mild, latent or therapeutically affected. This realization has stimulated interest in immunological means of augmenting clinical and laboratory findings. Intradermal tests have been used with promising results by several investigators (Hosokawa *et al.*, 1952; Yokogawa *et al.*, 1955; Chung *et al.*, 1955_a, 1955_b; Hunter *et al.*, 1958). A few attempts have also been made to use serological tests as aids for the laboratory diagnosis of paragonimiasis (Ando, 1921; Chung *et al.*, 1956; Yokogawa *et al.*, 1956).

Relatively crude extracts of the adult worms were used by the above investigators and cross reactions among patients with clonorchiasis, schistosomiasis, fasciolopsiasis, leprosy and syphilis were observed. The relatively low degree of specificity of the above tests is considered a serious limitation for their widespread use, since many of the cross reacting infections are prevalent in the same areas in which paragonimiasis is endemic.

In view of the encouraging results obtained with an acid soluble protein fraction of *Trichinella spiralis* in the serological diagnosis of trichinosis (Melcher, 1943; Sadun and Norman, 1955; Norman *et al.*, 1956), attempts were carried out in the present study to develop purified antigens which would impart a higher degree of specificity and sensitivity to the intradermal and complement fixation tests for paragonimiasis.

Preliminary results of these studies have been reported in abstract form (Sadun *et al.*, 1958).

Materials and Methods

1. *Preparation of Antigens.* Intradermal and complement fixation antigens were prepared from adult *P. westermani* obtained from experimentally infected cats and dogs. Metacercariae were dissected out of fresh water crabs, *Eliocheir japonicus*, de Haan, suspended in water and fed to the experimental animals with a medicine dropper. After eggs were observed in the stools 60 to 70 days following infection, the animals were sacrificed and the worms collected from the lungs. The living parasites were washed repeatedly in physiological saline, transferred to distilled water, and then rapidly frozen and lyophilized.

Three antigens were prepared from the adult worms: a relatively crude fat free antigen (PC), an acid soluble protein fraction (PM), and an acid insoluble but alkaline soluble protein fraction (PM-ins). The fat free antigen was prepared from dried

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adult worms following essentially the technique described by Chaffee and his coworkers (1954) for the preparation of *Schistosoma* antigen. The protein fractions were prepared according to the method described by Melcher (1943) for the preparation of purified *Trichinella* antigens. Protein determinations were made of each lot of antigen prepared and the various lots were standardized in terms of amount of protein per 100 ml. The lyophilized antigen was sealed in ampules under reduced pressure and stored at 4° C.

2. *Immunological Tests.* The complement fixation tests were performed using procedures essentially the same as those of standard Kolmer's technique for the serodiagnosis of syphilis. The optimum dilutions of the antigens were determined for each lot by box titrations. Antigens for the intradermal tests were diluted with buffered saline to a concentration of 10 mg of protein per 100 ml at a pH of between 7 and 7.2. Merthiolate was added to a final concentration of 1 to 10,000. The antigens were transferred to sterile vials, placed in a water bath at 57° C for one hour on three consecutive days and lyophilized. After lyophilization all antigens were sealed under reduced pressure and stored at 4° C. Sterility tests in fluid thioglycollate medium with dextrose were performed on randomly chosen aliquots of each lot of antigen. The control solution consisted of buffered physiological saline containing 1:10,000 merthiolate (BSM).

The intradermal tests were carried out in humans by injecting between 0.03 and 0.05 ml of each solution intradermally into the skin of the volar surface of the forearm using aseptic technique, utilizing a similar amount of BSM as a control. Individual tuberculin type syringes were used for each of the antigens and for the control. Preliminary tests conducted in individuals examined at 5, 10, 15 and 30 minutes and at 1, 2, 3, 6, 12, 24 and 48 hours indicated that all positive reactions were of the immediate type and reached their peak between 10 and 20 minutes. All indurations had subsided after 6 hours and some had already faded 30 minutes after injection. Fifteen minutes after injection the limits of each wheal were outlined with a ball point pen and transferred to paper by pressing it against the outline. The areas were measured with a planimeter and expressed in square millimeters. A test was read as positive when the area of the antigenic wheal was at least twice that of the control wheal if 90 mm^2 or more, or at least thrice that of the control wheal if less than 90 mm^2. The control reactions were considered as giving false positive if producing wheals of more than 85 mm^2 regardless of how much larger the antigenic wheals were. The presence and intensity of erythema were not employed as criteria in reading the reaction.

3. *Source of Specimens.* Individuals from endemic areas with proven paragonimiasis were subjected to the intradermal test. In addition to *P. westermani,* the persons also harbored various intestinal helminths and protozoa. Individuals who were negative for *P. westermani* upon repeated examinations of stool and sputum and had no history of consuming raw crabs were used as controls. The incidence of intestinal helminths and protozoa was essentiaily the same as in those with proven paragonimiasis. One of the negative controls had a history of hypersensitivity to various proteins and repeated asthmatic episodes. In addition, individuals with related trematode infections but negative for *Paragonimus* were selected for this study.

Sera for the complement fixation tests came from individuals with proven *Paragonimus* infection from dermal reactors and from negative controls. In order to evaluate the degree of specificity of the reaction, sera from individuals with proven histoplasmosis, schistosomiasis, clonorchiasis, coccidioidomycosis, actinomycosis, sarcoid, carcinoma of the lung, syphilis, tuberculosis, and leprosy were tested. Cat sera were also used to study the development of antibodies in experimentally infected animals. The cats were given a single dose of between 20 and 30

TABLE 1

CUTANEOUS REACTIONS TO A PURIFIED *P. westermani* ANTIGEN IN PERSONS WITH PARAGONIMIASIS, CLONORCHIASIS, SCHISTOSOMIASIS AND IN UNINFECTED CONTROLS

Group	Trematode Infections	No. of Persons in Group	Test Solution	Percent Positive	Mean Size of Wheal in mm²
I	*P. westermani* only	93	PM	100	228
			BSM	0	46
II	*P. westermani* and *C. sinensis*	7	PM	100	212
			BSM	0	41
III	*C. sinensis* only	274	PM	23	74
			BSM	0	44
IV	*S. japonicum* only	50	PM	20	96
			BSM	0	43
V	None	121	PM	0.8	47
			BSM	0	40

metacercariae each and bled just before administering the metacercariae and at various intervals thereafter. At the end of each experiment all of the animals were sacrificed by exsanguination and the lungs examined for the presence of *Paragonimus* adults. Uninfected cats were bled from time to time as a source of negative control serum.

RESULTS

1. *Intradermal Tests.* In a preliminary experiment designed to compare the reactions produced by various fractions of the adult worm antigen, 50 individuals with proven paragonimiasis and 21 uninfected controls received intradermal injections of PC, PM, PM-ins and BSM. All the infected patients gave positive reactions to PM and PM-ins and 49 reacted positively to PC. No positive reactions were recorded in any of the controls. The wheals produced by PM and PM-ins in infected individuals were larger and more clear-cut than those produced by PC. Because of these preliminary observations the acid soluble protein fraction of *Paragonimus* adult (PM) was used in the following series, together with the saline control (BSM).

In a second experiment 545 individuals were separated into five groups. The results of the intradermal tests in these individuals are summarized in Table 1. All of the persons infected with *Paragonimus* (Group I) gave positive reactions, whereas only one out of 121 negative controls (Group V) reacted positively. The single positive in this group was observed in a Korean physician who spent considerable time in the endemic area but did not remember ever consuming raw crab or observing any clinical sign compatible with paragonimiasis. A repeat intradermal test on this person about two months later was negative. A certain degree of cross reaction occurred between *Paragonimus* antigen and infection with related trematodes (Groups III and IV). However, the wheal produced by the homologous antigen was always much larger and more distinct thus permitting an easy differentiation when homologous and heterologous antigens were used concurrently.

An analysis of the degree of reaction in relation to age and sex was made with a total of 365 persons with proven paragonimiasis and dermal sensitivity to PM antigen (Table 2). No significant differences in response between males and females were observed in the various age groups. In both sexes, however, the mean size of the wheal increased with age. An increased response

TABLE 2

CUTANEOUS REACTIONS TO A PURIFIED *P. westermani* ANTIGEN ACCORDING TO AGE AND SEX IN PATIENTS WITH PROVEN PARAGONIMIASIS

Age Groups in Years	Number of Persons Tested			Mean Size of Wheals in mm²			
	Males	Females	Both Sexes	Test Solution	Males	Females	Both Sexes
6–10	3	2	5	PM	163	172	167
				BSM	41	36	39
11–15	103	66	169	PM	198	201	199
				BSM	42	45	43
16–30	88	33	121	PM	224	229	225
				BSM	51	49	50
31 and over	39	31	70	PM	248	219	234
				BSM	56	53	55
All ages	233	132	365	PM	215	212	214
				BSM	48	48	48

with age was also observed at the site of introduction of BSM.

To study further the possible relationships between clinical paragonimiasis and the degree of intradermal reaction to PM antigen, 360 paragonimiasis patients were grouped into four categories based on the presence and duration of symptoms. As indicated in Table 3, significantly larger wheals were observed in individuals with clinical symptoms than among those without complaints. On the other hand, the duration of the symptoms did not appear to have any obvious relationship with the size of the wheal.

In the course of epidemiological surveys for paragonimiasis in South Korea to be reported elsewhere, 1,725 individuals from seven villages were subjected to the intradermal test. Three of the villages were in endemic areas and were located on the banks

TABLE 3

CUTANEOUS REACTIONS TO A PURIFIED *P. westermani* ANTIGEN ACCORDING TO DURATION OF SYMPTOMS

Duration of Symptoms	Number Tested	Test Solution	Mean Size of Wheals in mm²
No complaints	65	PM	199
		BSM	46
Less than one year	68	PM	216
		BSM	51
One through three years	150	PM	214
		BSM	46
Four years and over	77	PM	223
		BSM	51
Total	360	PM	214
		BSM	48

TABLE 4

CUTANEOUS REACTIONS TO A PURIFIED *P. westermani* ANTIGEN IN DIFFERENT LOCALITIES

Locality	Epidemiology	Number Tested	Number Positive	Percent Positive
Cheju-Do	On streams—Fresh water crabs —*Clonorchis* not endemic	969	599	62
Cheju-Do	Off streams—Sea water crabs—*Clonorchis* not endemic	400	40	10
Tae-Djo Myun	On streams—*Paragonimus* not endemic—*Clonorchis* endemic	356	21	6
Total		1725	660	38

of rivers where fresh water crabs were abundant, three villages were in endemic areas but on the sea coast where sea crabs were consumed primarily and one village was situated on the mainland in an area known for a high endemicity for clonorchiasis but not for paragonimiasis. The results are summarized in Table 4.

Detailed investigations were carried out in Korea on seven individuals with positive intradermal test for paragonimiasis in whom no eggs were recovered.

Case 1. A 10-year-old female from Pusan (I.Y.J.) was admitted to the hospital with a diagnosis of left sided empyema. Although the intradermal test for paragonimiasis was positive (PM: 192 mm²; BSM: 48 mm²) no eggs were found in the sputum in repeated examinations. Differential blood count revealed 18 per cent eosinophiles. Up to 90 per cent eosinophiles were found in repeated pleural aspirations. Complement fixation reaction for paragonimiasis was positive. On the tenth pleural asporation *P. westermani* eggs were found.

Case 2. A 22-year-old female from Pusan (L.C.D.) was admitted with a diagnosis of empyema. Subcutaneous and subfascicular abdominal cysts were found. Although the intradermal test was positive (PM: 172 mm²; BSM: 48 mm²) no eggs were found in the sputum after repeated examinations. Differential blood counts revealed 15 per cent eosinophiles. Complement fixation for paragonimiasis was negative. *Paragonimus* eggs were seen in the histopathological sections of a subfascicular cyst.

Case 3. A 23-year-old male from Chon-Yu (S.K.S.) was admitted with chronic pulmonary and abdominal complaints. Chest X-ray revealed the presence of numerous pulmonary cysts. On sigmoidoscopy, there was a cyst on the wall of the sigmoid, 17 cm in depth. Upon laparotomy, hundreds of cysts, at first believed to be nodules of tuberculous origin, were seen in the mesenteries and in the omentum. Intradermal test for paragonimiasis was strongly positive (PM: 312 mm²; BSM: 69 mm²). Complement was positive. No *Paragonimus* eggs were seen in repeated stool and sputum examinations. Eggs were found in the histopathological sections of a cyst excised from the omentum, and finally appeared several weeks later in the stools.

Case 4. A 17-year-old female from Pusan (H.K.J.) was admitted to the hospital with right sided empyema. Four other members of the family had paragonimiasis. Radiographic examination was suggestive of early infiltrative pulmonary paragonimiasis. Intradermal test was strongly positive (PM: 328 mm²; BSM: 64 mm²). Differential blood count revealed 21 per cent eosinophiles. Thirty per cent eosinophiles but no eggs were found by pleural aspiration. Complement fixation for paragonimiasis was positive. Only two eggs were found in the sputum by concentration in four samples examined.

TABLE 5

COMPARISON OF RESULTS OF COMPLEMENT FIXATION TESTS, INTRADERMAL TESTS AND SPUTUM EXAMINATIONS ON THE SAME INDIVIDUALS

Group	Sputum Exam	ID Test	Results of Complement Fixation Test			
			Positive	Negative	Anticompl.	Total
I	Positive	Positive	72	8	6	86
II	Negative	Positive	6	14	1	21
III	Negative	Negative	0	51	4	55
Total	—	—	78	73	11	162

Case 5. A 13-year-old male from Pusan (L.Y.S.) was admitted with empyema of the right pleura and a cyst in the connective tissue of the right testicle. Three other members of the family had paragonimiasis. Although the intradermal test was positive (PM: 172 mm²; BSM: 40 mm²) no eggs were found in the sputum in repeated examinations. The leukocyte count was 12,700 with 71 per cent eosinophiles. Up to 90 per cent eosinophiles were found in pleural aspirations. Complement fixation reaction for paragonimiasis was positive.

Case 6. An 11-year-old male from Undong (C.Y.C.) was admitted with a history of hemoptysis. Radiological examination revealed the presence of two small cysts surrounded by infiltration. Pulmonary tuberculosis was excluded because of negative quantitative tuberculin test (Mantoux). In addition, a cyst in the connective tissue near the left testicle was found. Although the intradermal test was strongly positive (PM: 284 mm²; BSM: 52 mm²) no *P. westermani* eggs were found in repeated sputum examinations. The leukocyte count was 36,000 with 76 per cent eosinophiles. Complement fixation reaction for paragonimiasis was positive. Treatment with chloroquine was instituted with satisfactory results.

Case 7. An 11-year-old female from Undong (C.S.H.) was admitted with bilateral empyema. Although the intradermal test for paragonimiasis was positive (PM: 116 mm²; BSM: 24 mm²) no eggs were found in repeated sputum examinations. The leukocyte count was 23,000 with 62 per cent eosinophiles. Up to 80 per cent eosinophiles were found in pleural aspirates. Complement fixation reaction for paragonimiasis was positive. The patient responded well to treatment with chloroquine.

2. *Complement Fixation Test.* A preliminary experiment was designed to test various antigenic fractions of the adult worm in the complement fixation reaction. Box titrations for each of the three antigens were performed using human and cat antisera. The results indicated that PM and PM-ins were more sensitive than PC and gave more consistent quantitative reactions when the same sera were tested at different times. Although similar results were obtained with PM and PM-ins, the latter antigen appeared to be slightly more sensitive. Because of these preliminary observations and for a better utilization of the relatively small number of worms available, the acid insoluble but alkaline soluble protein fraction of *Paragonimus* adult (PM-ins) was used throughout the following series of experiments.

Sera from five cats inoculated with a single dose of metacercariae were tested. The cats were bled before being fed the metacercariae and at regular intervals up to 130 days following infection. All of the animals gave negative complement fixation reactions before ingestion of metacercariae and all of them became positive around 30 days follow-

ing infection. Sera obtained at the end of the experiment, 130 days following infection, were still positive. Stool examinations, conducted at regular intervals, showed the first appearance of eggs between 60 and 70 days following ingestion of the metacercariae. Sera from uninfected controls gave consistently negative reactions.

The result obtained by the complement fixation, by the intradermal test and sputum examinations were compared in 162 individuals separated into three groups (Table 5). Since none of the people with proven paragonimiasis gave negative dermal reactions, no such group could be established. Only 8 individuals with proven active paragonimiasis gave negative complement fixation reaction. Conversely, none of the individuals with negative intradermal tests gave positive complement fixation reaction. It is of interest to notice that several individuals with positive intradermal tests in whom no eggs could be found in the sputum, gave positive complement fixation reaction. Most of those with positive intradermal and negative complement fixation tests had ceased to pass eggs after therapy.

In order to test the degree of specificity of the complement fixation test for paragonimiasis with this purified antigen, sera from individuals suffering from conditions which have been reported to cross react serologically with crude *Paragonimus* antigens, were tested. In addition, an effort was made to test sera from patients with diseases which clinically resemble paragonimiasis and which often must be differentiated from this trematode disease. All together, 48 sera from clonorchiasis patients, 58 from schistosomiasis patients, 5 from histoplasmosis patients, 5 from coccidioidomycosis patients, 2 from actinomycosis patients, 3 from sarcoid patients, 11 from syphilis patients, 22 from tuberculosis patients, 10 from leprosy patients and 1 from a person with proven carcinoma of the lung were tested. All but one *Clonorchis* antisera gave negative results with PM-ins antigen, even though they gave positive reactions at high titer with their homologous antigens, except, of course, the serum from the case of lung carcinoma.

Discussion

Interest in producing purified antigens in the immunodiagnosis of paragonimiasis was initiated by the fact that the crude antigens contain factors which produce extensive cross reactions and which render the tests difficult to interpret. The present work indicates that purified antigens produced from *Paragonuimus* adults give more reliable results.

Intradermal tests with an acid soluble protein fraction of the adult elicited only moderate cross reactions with related trematodes such as *Clonorchis* and *Schistosoma*. This may not be a serious obstacle in clinical practice since these diseases are, as a rule, clinically distinct from each other. In epidemiologic surveys conducted where two or more of these parasites are endemic, our results indicate that it is possible to differentiate *Paragonimus* and *Clonorchis* infections by introducing the two antigens at the same time and by comparing the results. However, if one of the two antigens is used alone, or if both infections are present in the same individuals, sputum and stool examinations and/or complement fixation tests are required for a proper diagnosis.

All of the individuals with proven *Paragonimus* infections gave positive intradermal reactions, whereas no eggs were recovered from a single sputum specimen from many of the reactors. The failure to recover eggs may be due to the following reasons: 1) the number of eggs discharged is small, 2) no eggs discharged, either because of "closed" pulmonary, or extra pulmonary infection, 3) recovery, either spontaneous or as a result of treatment, 4) non-specific false positive reaction. For a proper evaluation of the intradermal reaction, it was deemed important in the present study to investigate how extensive this fourth group is, if present at all.

Only one false positive reaction, which on retesting reverted to negative, was ob-

served out of 121 controls notwithstanding the fact that at least one person in this group was hyperallergic and that most of the others harbored intestinal protozoa and helminths other than trematodes. In epidemiological surveys, whereas many positive reactors were found in villages situated in endemic areas, on the banks of rivers where people consume primarily fresh water crabs, only few persons reacted positively in villages situated in non endemic areas. Of those individuals with positive intradermal test in whom no *Paragonimus* eggs were found, some gave positive complement fixation reaction and most of the others had histories of recovered past infections. Detailed clinical and laboratory studies in some of the individuals with positive dermal sensitivity and negative sputum revealed the presence of infection. In these particular instances, the usefulness of the test was well demonstrated, since had it not been for the skin test these cases would have been overlooked or misdiagnosed. The sum of these observations indicates that in most instances the intradermal test with the antigen employed is reliable and that a positive reaction is highly suggestive of present or past infection.

It was evident, however, that the intradermal test gave positive reactions even in those cases in which the patients had recovered from the disease. In those instances, serological tests are necessary to differentiate between active present cases and past infections. The results of this study, in humans and experimental animals, indicate that a complement fixation test using as antigen an acid insoluble, alkaline soluble protein fraction of the adult worm, is very specific and rather sensitive. The fact that no false positive reactions were observed in clinically similar conditions, in infections with related trematodes and in those conditions such as tuberculosis, leprosy and syphilis previously reported to cross react with crude *Paragonimus* antigens, make this test quite useful for a differential diagnosis in doubtful cases. With the aid of the complement fixation test using this purified antigen, it should be possible in clinical practice to diagnose cases with early, mild, or latent infection, cases without expectoration or with negative sputum and atypical extrapulmonary cases.

Attention is called to the fact that in our experimental animals, positive complement fixation reaction was observed 30 days following administration of metacercariae, whereas, stools became positive 60 to 70 days after infection. This observation is in agreement with previous observations (Chung *et al.*, 1956). If confirmed and extended to human infections these results indicate that the complement fixation test may be very useful in the early diagnosis of paragonimiasis much before eggs have appeared in the sputum, thus enabling to institute treatment in the early stages of the disease.

Summary

The intradermal test using an acid soluble protein fraction of *Paragonimus westermani* adults was performed on over 2,000 human volunteers. All of the persons with proven infection gave positive results. Only moderate cross reactions with related trematode infections were observed.

The complement fixation test using as antigen an acid insoluble, alkaline soluble protein fraction of the adult worms was performed with sera from humans and experimentally infected animals. The test with this purified antigen appeared to be very specific and useful in providing a laboratory aid for the diagnosis of early or atypical extrapulmonary cases and in evaluating the results of therapy.

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THIS IS THE TIME TO GIVE TO THE RED CROSS

Entameba Histolytica*

Incidence in the Central Penitentiary, Tegucigalpa, Honduras

By

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INFECTION with *Entameba histolytica* draws continued attention from parasitologists, pathologists and physicians because of its complex pathology and mode of action. Infection with the protozoa may be limited to the lumen of the intestine and not give rise to any pathological or clinical manifestations, or it may invade the wall of the intestine, attack the tissues and produce a fulminating infection and death. In the former case the infection may last for years, while in the latter case the course of the disease may be short.

MATERIAL AND METHOD OF STUDY

In another paper[1] we presented a general study of intestinal parasitism among supposedly healthy male inmates of the Central Penitentiary at Tegucigalpa, Honduras. Although several reports in the literature condemn the use of a saline laxative prior to stool examination, our experience has been to favor its use to other methods of concentration. This view has been expressed by Hegner et al.[2] and Dubois and VanDen Berghe.[3]

A portion of each two purged stools per inmate is collected in sterile one ounce containers every morning except Saturdays, Sundays and holidays. The containers and contents are *immediately* taken to the laboratory where they are placed in an incubator until ready for microscopic examination. The examination should be done within 45 minutes but longer intervals of up to 4 hours have not proven to be detrimental in our study. All examinations are done by the same individual. A portion of the stool (0.5 gram) is thoroughly mixed with 5 cc of saline solution using 30 uniform glass beads to ensure complete break up of the feces. Of the resulting suspension, 0.5 cc is placed on a large glass slide and examined. Where indicated and for comfirmation in doubtful cases a drop of d'Antoni's iodine is added. Two specimens from each stool sample are examined, each averaging 400 microscopic fields per slide per each examination. On the basis of the average number of parasites found the case is graded as follows:

1 plus—1 to 2 parasites per slide
2 plus—2 to 5 parasites per slide
3 plus—1 to 5 parasites per field
4 plus—5 to 10 parasites per field

By this method a rough estimate of the heaviness of infection is obtained. Our laboratory findings have been further sub-divided according to the parasite form found in the fecal specimen, i. e., active (trophozoite or vegetative) form, active and cyst form combined, and cyst form alone.

RESULTS

Incidence of E. histolytica infection, relationship to age groups and individual parasite forms. Of the 1,083 inmates infected with intestinal parasites, 662 (61.1 per cent) had infections with *E. histolytica* as the sole infecting parasite or with *E. histolytica* combined with one or more other parasite. As a solitary parasitic infection, *E. histolytica* was found in 261 of the supposedly healthy male prison inmates. *E. histolytica* was found in combination with other parasites in 401 of the supposedly healthy prison inmates.

Table 1 gives an analysis of the findings in the 662 cases of *E. histolytica* infection by parasite form and age group. There does not seem to be any other report in the current literature that has analysed *E. histolytica* infections in a similar fashion. Foll[4] at the Burma Oil Co., reported in 1957 finding vegetative forms alone, vegetative and cyst

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TABLE 1. INCIDENCE OF ENTAMEBA HISTOLYTICA IN THE CENTRAL PENITENTIARY, HONDURAS

Age Groups	E. histolytica alone				E. histolytica & other parasites				Combined totals
	Active form only	Active & cyst forms	Cyst form alone	Total	Active form alone	Active & cyst forms	Cyst forms alone	Total	
15–20	10	9	14	33	9	23	21	53	86
21–25	16	15	22	53	15	31	31	77	130
26–30	11	31	23	65	29	35	35	101	166
31–35	5	19	21	45	13	28	16	57	102
36–40	10	9	15	34	13	12	13	38	72
41–45	7	4	4	15	5	18	23	46	61
46–50	3	2	1	6	4	3	4	11	17
51–55	0	0	2	2	2	2	5	9	11
56–60	2	0	4	6	1	4	2	7	13
61 & over	2	0	0	2	0	1	1	1	4
Total	66	89	106	261	91	159	151	401	662

forms combined in 49 of 55 patients examined by him while only 6 patients had cyst forms alone. The results at the Central Penitentiary indicate that although cyst forms are passed much more frequently in asymptomatic individuals, both active forms alone and active and cyst forms combined may be passed. There were 157 instances of active forms alone (23.7 per cent); 248 instances of both active and cyst forms combined (37.5 per cent); and 257 instances of cyst forms alone (38.8 per cent). There is a slight variation in the distribution of the various parasite forms when solitary *E. histolytica* infections are compared with combined *E. histolytica* infections.

In an attempt to explain the unprecedented findings, the sponsor suggested that the administration of the saline purge may have been a factor in converting an asymptomatic amebic infection into a pseudo (drug induced) acute amebic dysentery. This has been explained by the fact that the salts increase intestinal motility and convert the cyst form to the trophozoite form. The administration of paregoric, conversly, slows the fecal stream and converts the trophozoite form to the cyst form.

To eliminate this effect, a subseries was run on 250 known positive inmates. One half (125 inmates) of the test group were given 4 cc of paregoric 3 times a day for 1 week while another 125 inmates were not given any drug. The findings in this subseries are found in Table 2.

There is a slight variation noted between the three test groups but it is not statistically significant. No explanation is offered for the observed findings. The fact that native Hondurans have been in intimate contact with *E. histolytica* for many generations causes certain symbiotic reactions between the host and parasite which may be a factor in the observed results. Long term host-parasite relations lasting generations alters the normal reaction patterns. Host immunity, attenuation of parasite virulence, alterations in parasite pathogenicity and toxicity, etc., must result.

These results in no way conform to the usually accepted theories dogmatically expressed by parasitologists that the so called "chronic" case passes only cyst forms while the case of "acute" amebic dysentery passes only active or trophozoite "forms" in the stool. "The trophozoite form of the parasite is found in patients with acute amebic dysentery and the cyst in patients, with quiescent infection."[5] Craig[6] has further emphasized the fact that the healthy carrier while passing cysts in the stool may harbor vegetative forms within the bowel tissue at the same time. The

TABLE 2. INCIDENCE OF ENTAMEBA HISTOLYTICA INFECTION IN CENTRAL PENITENTIARY, HONDURAS (250 CASES SELECTED OF WHICH 125 GIVEN PAREGORIC)

Drug Administered		E. histolytica alone			Total	E. histolytica & other parasites			Total	
		Active alone	Active & cyst com.	Cyst alone		Active alone	Active & cyst comb.	Cyst alone	Total	Cases comb.
Mag. Sulfate		66	89	106	261	91	159	151	401	662
250 cases	Paregoric 4 c/r. TID 1 week	16	15	20	51	15	26	33	54	125
	None	12	16	22	50	13	32	30	75	125
Total		94	120	148	362	119	217	214	509	912

statement that cysts are never found in a diarrheal or dysenteric stool has been taken for granted. Our results as indicated in Table 1 definitely negate the first concept. Since we did not study any inmates with acute diarrhea or symptoms of an amebic dysentery we cannot confirm or deny the last statement.

As observed from a study of Table 1, the overall age distribution of *E. histolytica* infection among the male inmates apparently conformed to that given in the literature. Most of the positive infections were found in the 26 to 30 years age group. The 21 to 25 year age group was second; the 31 to 35 year age group was third, and the 15 to 20 year age group was fourth, with the other age groups having less and less positive inmates. The smaller number of positive cases in the older age groups may be due to the fact that there were fewer inmates of those ages among the prisoners. These figures take into consideration all three parasite forms and both solitary *E. histolytica* infections and combined *E. histolytica* infections. The breakdown for each individual parasite form and for both types of *E. histolytica* infections are well outlined in the table and need no further discussion at this point.

Attention should be drawn to the fact that in the 26-30 year age group more inmates had stools showing both active and cyst forms for both classifications. The fact that in the combined parasite infections there were more cases with active and cyst forms in the 31-35 year age group is also significant.

Correlation between the clinical manifestations and the parasite forms found in the stool. Much has been written about the clinical manifestations of *E. histolytica* infections. Amebiasis is definitely a protean disease imitating many other gastrointestinal infections. Infection with the parasite is very widespread. It spares no economic level but favors the lower income groups. Between 5 and 10 per cent of the general world wide population has been found to be apparently healthy "carriers."[7] Craig has divided amebiasis into five categories or syndromes depending on the mildness or severity of the symptoms and clinical manifestations. He bases his clinical decisions entirely on an evaluation of the personal host response to the stimuli resulting from the parasite infection. Since such evaluation depends on the host interpretation of his individual reaction to stimuli (abdominal pain, abdominal cramps, vague dyspeptic symptoms, etc.) there may be confusion within classifications 1 and 2.

Identical degrees of stimuli may produce hardly any response in one individual while it may produce a more marked response in another individual. Certain aspects of the classification can be accurately evaluated on a scientific basis—(1) blood in the stool, oc-

cult or actual red blood cells; (2) microscopic character of the stool with mucus, Charcot Leyden crystals, etc.; (3) positive stools for *E. histolytica*; (4) sigmoidoscopic scrapings showing *E. histolytica*; (5) positive complement fixation tests when actual tissue invasion has occurred; (6) distribution of the abdominal pain, tenesmus, sensitivity, etc., on actual physical examination; (7) the presence of complications (hepatic, pulmonary, cerebral, appendicitis, granulomas, etc.) indicated by all the clinical manifestations, physical signs and confirmatory laboratory test. As a clue to possible amebic infection we have included three additional signs typical for infections in Honduras: (1) a marked intolerance to any meat or meat products excepting fowl, (2) an intensification of the abdominal distress, pain, tenesmus on drinking even the smallest amount of alcohol; (3) the typical distribution of the abdominal pain, colonic tenesmus, and the peculiar doughy feel of the cecum, transverse colon and descending colon. Rolling the intestinal segments between the palpating fingers imparts an undescribable feeling that is not found in any other condition.[8]

Our classifications have been based on the results of a personal inquiry of the individual inmate. He was specifically asked questions that could be related to each of the clinical categories described by Craig, limiting ourselves to a period of time of not more than six months prior to the date of the stool examination.

Based on Craig's classification, the 662 positive cases of asymptomatic *E. histolytica* infection have been divided into 4 groups from the replies to the inquiries made. The same questions were made to those inmates whose stools were absolutely negative and to those whose stools were positive for parasites other than *E. histolytica*. The results are tabulated in Table 3. On the basis of our clinical investigation and clinical classifica-

TABLE 3. INCIDENCE OF ENTAMEBA HISTOLYTICA INFECTION IN THE CENTRAL PENITENTIARY, HONDURAS—662 CASES ACCORDING TO CRAIG CLASSIFICATION

Clinical Classification "CRAIG"	PURGED STOOL RESULTS ALL CELL BLOCKS								Combined Totals	Totals for E. histolytica infections	
	Active* form E. histolytica		Active and Cyst form E. histolytica		Cyst form E. histolytica		No parasite	Other parasite Not. E.H.			
#1	91	33/58	154	37/117	133	48/85	228	223	829	378	118 / 260
#2	37	15/22	54	24/30	73	32/41	119	66	349	164	71 / 93
#3	16	10/6	23	18/5	29	14/15	26	82	176	68	42 / 26
#4	13	8/5	17	10/7	22	12/10	36	50	138	52	30 / 22
Total	157	66/91	248	89/159	257	106/151	409	421	1,492	662	261 / 401

* Upper small figure E. histolytica infection alone. Lower figure E. histolytica infection with other parasites.

tion, the 662 supposedly asymptomatic inmates could be classified as follows: totally asymptomatic for a period of up to 6 months prior to the stool examination, 378 inmates; mild clinical symptoms of vague nature within the same 6 months period, 164 inmates; semimarked clinical manifestations, with abdominal pain, etc., immediately prior to or within the 6 months limit, 68 inmates; more marked symptoms with repeated episodes, blood in the stool, mucus, severe abdominal pain and tenesmus at the stated period, 52 inmates. (Note: blood was not confirmed by laboratory examination.)

With the exception of those inmates that were classified as clinical type 4, the number of cases passing vegetative forms alone was approximately 50 per cent less than for the other parasite forms expelled in the stool. In the asymptomatic group there were 91 inmates who passed only the active forms of the parasite; 154 inmates of the same clinical group passed both active and cyst forms together; and 133 inmates of the same clinical group passed cyst forms alone. By all the rules and regulations of parasitologists, this clinical group, "the carrier" or asymptomatic group, should have had only cyst forms in the stool. These results are statistically significant, and do not conform to the previous reports in the literature.

Those inmates that were classified as group 2, the mildly symptomatic or those with vague abdominal complaints, showed only 37 passing active forms alone; 54 passing both active and cyst forms combined; and 75 passing cyst forms alone. This same increase of the three parasite forms could be found in the other groups (3 and 4) of the clinical classification.

These findings do not conform to the expected. In those inmates with definite clinical manifestations the stools should have had vegetative forms in predominance. This variation may result from the fact that the stool examination was done at a time when the patient was actually clinically asymptomatic. If the stool had been examined at the time the symptoms were present, these findings may have been completely reversed. A study on a group of prison inmates with symptomatic *E. histolytica* infection is underway to compare the type of parasite found in the stool during symptomatic infection compared to latent or chronic infection. Fall's report does not indicate whether his patients had an active infection or were suffering from a latent asymptomatic disease. The preceding analysis is important and has not been given sufficient attention in the literature.

As a control check on the previous findings, the prison inmates with negative stools and those with other intestinal parasites were studied in an identical manner. There were 228 inmates (53.9 per cent) with completely negative stools who were totally asymptomatic; 119 inmates (29.1 per cent) had vague indefinite symptoms; 26 inmates (6.3 per cent) still had vague indefinite symptoms but to a more marked degree on repeated occasions; and 36 inmates (8.8 per cent) had symptoms that could be described as aping an acute or chronic amebic dysentery. There were 223 inmates who had non *E. histolytica* positive stools (52.9 per cent) with a totally asymptomatic history; 66 inmates (15.6 per cent) had very mild symptoms; 82 inmates (19.4 per cent) suffered from recurring attacks of diarrhea accompanied by more marked vague indefinite gastrointestinal complaints; and 50 inmates (11.8 per cent) suggested symptoms of an acute or chronic amebic dysentery.

Discussion

There remain today many unsolved problems in amebiasis. The cause for the high incidence rate among varying population groups is still unanswered. Unquestionably fecal contamination is involved. Since the ameba cannot multiply in the cyst stage outside the body, other factors must be involved in the epidemiology of the disease. This is confirmed by the findings at the Central Penitentiary at Tegucigalpa, Honduras, where the incidence of amebic infection in apparently healthy male inmates is quite high.

Cordova in 1931 (quoted by Craig) and

Brewster[9] in 1930 reported incidence rates for *E. histolytica* infections of from 20.0 per cent to 58.5 per cent among native born Hondurans. This incidence varied with the socioeconomic level of the person examined, the local geographic area under study, the natural habits of the person studied and many other factors that need not be repeated here. The relationship of climate, rainfall, humidity, soil pollution, food and water contamination, elevation have been emphasized in other papers. Among the prison population included in this study all of the previously discussed factors remain constant: all are subjected to the same environmental forces. There is no soil pollution. Except for the personal sanitary habits of the prison inmates, the unsanitary conditions of the prison toilet facilities and the remote possibility of food contamination, risk of exposure is at a minimum.

At the penitentiary all factors such as a climate, rainfall, humidity, soil contamination, etc., were constant variables for all the inmates studied. Food contamination was possible since many of the kitchen help were infected. That this factor was of no consequence is due to the fact that no raw fruits and vegetables are eaten by the prison inmates whose diet consists of cooked soups, rice, beans and tortillas (the tortilla is used to eliminate knife and fork). On the basis of these facts it must be concluded that the inmates passing active forms alone and active and cyst forms combined are factors to be considered in the spread of infection and these in addition to the cyst passers. Eliminating a contaminated water supply and infected food, the lack of sufficient toilets in each cell block, the personal sanitary habits of the inmates, and the chance of spread through fly and cockroach droppings, were the epidemiological factors maintaining the high incidence rate among the prison inmates.

That repeated infections occur in unsanitary environments is unquestionable. So is the fact that symptomless infections may be the result of faulty hand sanitation, improper personal hygiene after a bowel movement and improper care of the existing toilet facilities when known to be used by infected persons. These facts have been substantiated by our own observations of the prison sanitary conditions and questioning of the inmates as to their own personal habits. In order of importance in positive cases we enumerate: failure to use toilet paper, preference being given to a small "bit" of newspaper crinkled in the hand, a leaf, rough stone, corn leaf or nothing (90 per cent of the inmates admitted such practices); washing the hands after a bowel movement was admitted by only 25 per cent of the inmates; flushing the toilet after use was admitted by only 5 per cent of the inmates. Many of these personal habits are due to age old customs maintained by improper education, failure to instruct the inmates in the simpler rules of personal hygiene and antiquated methods.

When *E. histolytica* is present and only the intestinal wall has been invaded there is ulceration, spread of infection and the varied symptomatology described for the disease. When or under what conditions the tissues are invaded is unknown. Nor do we know what stimulates tissue invasion. Diet, vitamin deficiencies, secondary infection, changes in the intestinal bacterial flora are some of the causes that have been given. At the prison we had an opportunity to observe that when the asymptomatic *E. histolytica* passer developed a secondary infection, failed to take his supplementary vitamins, had a serious tooth extraction (to mention but a few factors) he reported to the dispensary with varying intestinal complaints. Once the acute infection was controlled, the intestinal complaints disappeared.

At the time of tissue invasion, with the onset of symptoms, or during the phase of recovery, the infected person passes active forms which are theoretically not infectious. This does not seem to be the case in all countries. Here in Honduras, the inmates classified as groups 2, 3 and 4 may be in the stage of tissue invasion, the stage of active infection, or the stage of recovery. On laboratory examination they are found to be

TABLE 4. STUDY OF 662 INMATES OF CENTRAL PENITENTIARY, HONDURAS SHOWING E. HISTOLYTICA

Parasite Form	Degree Parasite Infection	Clinical Classification Amebic Infections (Craig)				Total
		1	2	3	4	
Active Form Alone	1+	20	1	5	4	30
	2+	52	24	5	2	83
	3+	10	8	4	2	24
	4+	9	4	2	5	20
	Total	91	37	16	13	157
Active Cyst Forms Combined	1+	62	8	12	6	88
	2+	46	22	8	3	79
	3+	31	16	3	8	58
	4+	15	8	0	0	23
	Total	154	54	23	17	248
Cyst Form Alone	1+	65	18	15	10	108
	2+	38	27	5	7	77
	3+	22	18	2	5	47
	4+	8	10	7	0	25
	Total	133	73	29	22	257
Total	All degrees	378	164	68	52	662

passing more active and cyst forms combined and cyst forms alone than active forms alone. The totally asymptomatic group, who should have shown almost nothing but cysts in the stool, again had more showing active and cyst forms combined and cyst forms alone. This can mean one of three things: (1) The "cyst passer" is not the prime cause of infection, reinfection or autoinfection, (2) the active form must be involved in the maintenance of infection under certain environmental conditions, and (3) the actual parasite differs in its physiology, cultural reactions, morphology and tissue reactions from the parasite as found in other parts of the world.

That confusion in diagnosis may result without a thorough and careful laboratory stool examination, preferably after a saline purge, is evident. In any suspected case a single negative stool, even in the absence of symptoms, does not rule out an amebic infection. The finding of *E. histolytica* in the stool, without clinical evidence of tissue invasion, does not indicate an active infection. But such a finding should not be ignored if reliance can be placed on the laboratory result. That symptoms can be present without finding any intestinal parasite may simply mean that the examiner has missed the parasite or that the host has not expelled any at the moment of collecting the stool. Repeated stool examinations on the negative stools may reveal them to be positive on subsequent examinations. It is a well established fact that a stool may be positive for any given intestinal parasite one day and be absolutely negative on the following day.

The symptoms in amebiasis depend in large part on the tissue invasion by *E. histolytica*, the type of bacterial flora associated with the ameba in the lumen of the intestinal tract and on the actual number of *E. histolytica* present and multiplying within the colon.[10] Table 4 gives the results of an analysis of the inmates having *E. histolytica* in the stool according to parasite form, degree of infection and clinical classifications.

The overall picture is not very clear. In the clinically asymptomatic group there is a

definite relationship between the degree of infection and lack of symptoms for all three parasite forms. In the same clinical group there were more light infections (1 and 2 plus) than heavier infections (3 and 4 plus). The variation between the 1 and 2 plus infections, for all three parasite forms, is less marked than the variations between the 3 and 4 plus infections. The table is self explanatory.

Swartzwelder[11] has presented evidence that item 1 and 2 may be valid by showing that swallowing motile trophozoites can produce infection. That this method of infection does not occur frequently in nature is due to the fact that the trophozoite is very susceptible to destruction by sunlight, drying and other conditions while remaining viable for indefinite periods if kept moist. Under the conditions existing at the prison, and particularly considering the unsanitary conditions of the toilets themselves, it is certainly possible that the active forms of *E. histolytica* may remain viable within the moist, dank, unlit toilets. It would be of definite value to determine the effects of fecal contaminated stagnant water on the growth, maturation, development and pathogenicity of *E. histolytica.* That growth and multiplication should occur is unquestionable since the essential requirements for the *E. histolytica* are present: viable bacteria and tissue cells. It is not essential that either the bacterial or the tissue cells multiply themselves while permitting multiplication of *E. histolytica.* On the basis of this evidence it must be presumed that every case of *E. histolytica* infection, whether a cyst passer, trophozoite passer or passer of both forms, is a potential source of infection given the particular environmental surroundings favoring infection by direct contact.

Summary

1. Of the 1,083 asymptomatic prison inmates infected with intestinal parasites, 662 inmates (61.1 per cent) had infection with *Entameba histolytica* as the sole infecting parasite or with *E. histolytica* combined with one or more parasites. As a solitary infection it was found in 261 of the supposedly healthy male inmates. In combination it was found in 401 of the healthy male inmates examined.

2. In Honduras the asymptomatic individual or apparently healthy "carrier" does not have cyst forms alone in the stool in 100 per cent of the cases. Active forms alone and active forms and cyst forms combined were also found in the stools of these parasite passers. These findings do not conform to the usual criteria: "carriers" pass only cyst forms; "acute case" passer only active forms.

3. The administration of paregoric, a saline laxative or no intestinal depressant or stimulant, does not seem to alter appreciably the type of parasite form found in the stool of native Hondurans manifesting absolutely no symptoms.

4. The overall age distribution of *E. histolytica* infections among the prison inmates conforms to that usually given in the literature, irrespective of parasite form found in the stool. It is of clinical importance that in the combined infections there were more inmates showing more parasite infections of all three forms up to the 46 to 50 year age group than in the solitary *E. histolytica* infections.

5. On the basis of clinical classification, the 662 supposedly asymptomatic prison inmates were grouped as follows: totally asymptomatic, 378 inmates; mild clinical symptoms of vague nature, 164 inmates; semimarked clinical manifestations with abdominal pain, etc., 68 inmates; more marked symptoms with repeated episodes, blood in the stool, mucus, severe abdominal pain, tenesmus, 52 inmates. The base line for determining symptomatology covered a period no longer than six months before the period of study.

6. That the asymptomatic patient does not have only cyst forms in the stool is proved by the results obtained in this study. With the possible exception of those inmates that were classified as clinical type 4, the number of cases passing vegetative forms alone was approximately 50 per cent less than for the

other parasite forms expelled in the stools. In the totally asymptomatic group there were 91 inmates who passed only active forms in the stool; 154 inmates passed both active and cyst forms, and 133 inmates passed cyst forms alone.

7. Patients without intestinal parasite and patients with intestinal parasites other than *E. histolytica* may present signs and symptoms readily confused with a true *E. histolytica* infection.

8. That some relation exists between the degree of infection and the symptoms in any given patient, a relationship that is closely linked to the parasite form found in the stool, is suggested by the results of this study. This warrants further study.

9. The problems of amebiasis are not solved. These problems are closely related to the habitat and geographic distribution of the parasite.

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OBSTACLES TO MEDICAL PROGRESS, 1958

"It seems strange that scientists striving to devise better treatments to relieve suffering and postpone death should find anything but acclaim and gratitude for their work, but ironically even in the America of 1958 there are at least 6,000,000 adult citizens who regard medical scientists not as humanitarians but as fiends who willfully torture helpless animals. These six million are the hard core of the antivivisection movement. Another six million, approximately, would express themselves as being flatly opposed to animal experimentation according to several public opinion surveys.

"The antivivisectionists, working through more than 100 organizations across the country and spending millions of dollars annually, continue to sap the resources and creative time of medical scientists."—*12th Annual Report,* National Society for Medical Research

National Cancer Mortality

Data Correlated with Rejections for Neoplasms Under Selective Service System Examinations

By
HENRY G. MAZLEN*

THE state and regional analyses presented in this study are based upon age-adjusted cancer mortality rates per 100,000 population, as reported in the Journal of the National Cancer Institute[1] and upon published and unpublished research data of the Selective Service System.

Since it may be possible to effect additional correlation studies based upon Selective Service System research data, the regional divisions employed by the System, are utilized in this paper. These divisions of geographical areas of the United States coincide adequately with the sectional method of reporting cancer mortalities as adopted by the Public Health Service. In the text references herein, Region I is also referred to as the Northeast, Region II as the Mid-West, Region III as the Far West, and Region IV as the South.

Selective Service Records of physical examinations of drafted men necessitate the exclusion of cancers which are strictly pertinent to females. Therefore, cancers of the breast and uterus are eliminated from consideration in the types of rank correlations effected. This expedient in no way disturbs the comparisons for cancers which are otherwise distributed in the majority among males.

POPULATION DIFFERENTIALS

A number of states have fairly large "other than white" populations and it should be recalled that in the case of the southern states, the known low mortality from cancer among Negroes may clearly be attributed to the fact that only a small proportion of Negroes attain the advanced ages where cancers become second to heart disease as the primary cause of death. In fact, the longevity factor for white elements of the population, regardless of geographic distribution, constitutes a considerably longer exposure to the multiple carcinogenic influences which are associated with increases in cancer frequency with advance in age.

We must keep in mind, however, that increase in the frequency of cancer need not mean, necessarily, increase in cancer mortality rates. Controls already established and those currently in experimental stages, may yet prove effective in diminishing fatalities despite a large increase in frequency. In other words, an ideal condition may logically ensue, in time, where even with the severest cases, a cancer patient may be enabled to live out the "normal" span of life, succumbing finally to some primary cause, other than cancer itself.

RELATIVE STANDING OF THE STATES

Table 1 presents the relative standing of each of the states by the magnitude of the combined cancer mortality rates for afflictions of the skin, buccal cavity and pharynx, stomach or duodenum, liver and biliary passages. These predominantly male forms of cancer are arranged in ranking order with rejection rates for neoplasms, by individual state. These data can form a basis for regional differential comparisons.

It will be noted that a number of states are tied for certain rank standings. The order of arrangement within any given standing has been made in accordance with the magnitude of the percentage of "other than white" population of each state.

GENERAL COMMENTS

Table 1 indicates that New York leads the nation in the combined mortality rate for the

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TABLE 1. RELATIVE RANK OF THE STATES BY REPORTED CANCER MORTALITIES AND BY REJECTIONS FOR ALL RECORDED NEOPLASMS*

State	Rejections Per 1,000 examined	Relative Standing	Cancer Mortality Standing	Per cent of Non-White†
Illinois	8	1	2	5.0
New Jersey	8	1	5	5.6
Dist. of Columbia	7	2	7	28.4
Iowa	5	4	7	0.7
Michigan	5	4	4	4.1
Missouri	5	4	3	6.5
Montana	5	4	2	3.4
New Hampshire	4	5	8	0.1
New York	4	5	1	4.4
Maine	4	5	5	0.4
California	4	5	2	4.5
Florida	4	5	2	27.2
Minnesota	4	5	6	0.8
Delaware	4	5	6	13.5
Washington	4	5	1	2.2
Connecticut	3	6	6	2.0
Massachusetts	3	6	5	1.4
Indiana	3	6	4	3.6
Kansas	3	6	4	2.7
Ohio	3	6	3	4.9
Rhode Island	3	6	1	1.6
Louisiana	3	6	1	36.0
Pennsylvania	3	6	3	4.7
South Carolina	3	6	8	43.0
Texas	3	6	1	14.4
Nebraska	3	6	5	1.4
Oregon	3	6	5	1.2
North Dakota	3	6	8	1.6
Maryland	2	7	1	16.6
Wisconsin	2	7	3	0.8
Colorado	2	7	6	1.5
Oklahoma	2	7	2	9.9
Arkansas	2	7	8	24.8
Kentucky	2	7	6	7.5
Mississippi	2	7	4	49.3
New Mexico	2	7	5	7.4
North Carolina	2	7	7	28.1
Utah	2	7	4	1.3
Tennessee	2	7	6	18.4
Virginia	2	7	6	24.7
West Virginia	2	7	5	6.2
Vermont	2	7	6	0.1
Georgia	2	7	6	34.7
Nevada	1	8	7	5.6
Wyoming	1	8	6	1.7
Alabama	1	8	6	34.7
Idaho	1	8	2	1.0
Arizona	1	8	1	14.5
South Dakota	1	8	8	3.7

types of cancer cited. The "other than white" percentage of New York's population is shown as 4.4 whereas Louisiana, a state tied for first place shows 36.0 percent. It will be readily noted that there is considerable diversity in the distribution of states with large percentages of "other than white" population components. Thus, Mississippi, in 11th place, nationally, has 49.3 percent "other than white" whereas Louisiana, tied for first place, has 36.0 percent, and South Carolina, last on the list, has 43.0 percent. It would appear from this distribution that the "other than white" components do not influence the overall mortality rates significantly within the southern states. This leads to the inference that the recorded cancer mortality rates are primarily applicable to the "other than negro" components of the state populations.

WEIGHED DATA BY REGION

Consolidation and weighting of the relative orders of magnitude and combination into regional distribution permit presentation of the basic data in Table 2.

Table 2 discloses that for cancer mortalities of the types indicated in the stub, Region I, the Northeast, had the highest relative standing, followed by Regions II, III, and IV, in the order given. In the quartile summations the fourth quartile represents the *least* magnitude in cancer mortality rates. The lead of Region IV in quartile 4 means that more states of Region IV are in the *minimal* cancer mortality rate position than are the states of any of the other three regions.

DIFFERENTIATION BY STATE AND BY REGION

The analysis may now be further refined by examination of each type of cancer differentiated by state and by region.

CANCER OF THE STOMACH OR DUODENUM

Five states of Region II, the Mid-West, are among the first twelve states in the order

* Based on research data of the Selective Service System and Public Health Service Reports.

† Based on 1950 Census data.

TABLE 2. RELATIVE STANDING OF THE STATES BY MAGNITUDE OF CANCER MORTALITY RATES FOR SPECIFIC SITES, BY SELECTIVE SERVICE SYSTEM REGION*

Cancer Site	1st Quartile				2nd Quartile				3rd Quartile				4th Quartile				Total			
	Region				Region				Region				Region				Region			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Skin	14	—	15	16	10	12	11	11	8	6	7	—	4	4	3	—	36	22	36	27
Buccal Cavity-Pharynx	16	15	—	15	11	11	10	12	—	8	7	6	1	2	4	3	28	36	21	36
Stomach or Duodenum	14	16	15	—	12	11	12	10	6	8	7	—	3	—	—	4	35	35	34	14
Liver or Biliary Passages	15	16	14	14	10	12	11	11	8	6	8	7	1	2	3	4	34	36	36	36
Total	59	47	44	45	43	46	44	44	22	28	29	13	9	8	10	11	133	129	127	113

* Weighted ranking of cancer mortality rates for each of the states in each Region, based on Selective Service System. Data consolidations based on JOURNAL OF THE NATIONAL CANCER INSTITUTE, Vol. 6, April 1946, Number 5, Federal Security Agency, United States Public Health Service, Washington, D.C.

of magnitude of their respective cancer mortality rates for malignant afflictions of the stomach or duodenum. Region IV, the South, is not represented among these first twelve states and is conspicuous by this absence. In the second quartile, Regions I, the Northeast and III, the Far West, are tied with four states each whereas Region IV has but one state, Louisiana. In the third quartile, Region II leads with five out of twelve states. Region IV, *again*, is not represented. In the fourth quartile, the lowest order of rates for mortalities ascribed to cancers of the stomach or duodenum, we find that Region IV shows remarkable predominance with twelve states. Minnesota leads the nation in death from cancer of the stomach or duodenum whereas Arkansas holds the *minimal* position nationally.

CANCER OF THE LIVER OR BILIARY PASSAGES

Region II, the Mid-West, is represented by six of the twelve states in the first quartile. Region I has four states, Region II has one, Montana, and Region IV has one, Oklahoma. It will be noted, however, that Oklahoma is in *second place*, nationally. In the second quartile, Region II leads with five states. Region I shows three states and Regions III and IV each had two states. In the third quartile, both Regions I and II had four states. Minnesota represented Region II while Region IV had three states. In the fourth quartile Region IV again predominated with seven states. Heading the national list was Missouri with the highest mortality rate for cancers of the liver or biliary passages whereas New Mexico was last on this list.

CANCER OF THE BUCCAL CAVITY OR PHARYNX

Region I, the Northeast, predominated in the first quartile with eight states. Region II and Region IV were represented by two states each. *Region III was not represented.* In the second quartile, Region IV lead with four out of twelve states, apparently a slim margin. Regions I had II had three states each and Region III had two. Region II lead the third quartile with five states. Region I was not represented but Region III had four states whereas Region IV had three. In the fourth quartile, Region III predominated with five states. Delaware represented Region I. Region II had three and Region IV had four states in this last quartile. Rhode Island was first on the national list for can-

cers of the buccal cavity or pharynx whereas Utah was in the minimal position.

Cancer of the Skin

Analysis of the cancer mortality rates for malignant neoplasms of the skin reveals that Region IV, the South, held overwhelming predominance with *ten of the twelve states in the first quartile.* Region III, although represented by one state, Arizona, nevertheless held the top position, i.e. showed the highest death rate for cancer of the skin. Region I, represented by Maryland, was in twelfth position, nationally.

In the second quartile, Region II lead with five states. New York represented Region I. Regions III and IV each had three states in this quartile. Region I lead the third quartile with five states. Region IV was not represented. Region II had three states and Region III had four. In the last quartile, Regions I and II each were represented by five states. Region IV was not represented. New Hampshire was in the minimal national position with lowest recorded mortalities from cancer of the skin.

Consistency of the Pattern

A remarkably consistent pattern was revealed in the order of mortalities from the various types of cancer cited. Thus, 98% of the states placed cancer of the stomach or duodenum *first,* followed by 88% with liver and biliary passages, 90% with buccal cavity and pharynx and 90% with skin malignancies.

Forty-four of the states showed the following order of cancer mortalities:

1. Stomach or duodenum;
2. Liver and biliary passages;
3. Buccal cavity and pharynx,
4. Skin.

Nevada, Arizona, Idaho, Ohio and New York disclosed agreement on the following order:

1. Stomach or duodenum;
2. Liver and biliary passages;
3. Skin,
4. Buccal cavity and pharynx.

The Weight of Evidence

At the present time, the mass of evidence indicates that women are markedly susceptible to cancer of the genital organs whereas men appear to have a much higher susceptibility to cancer of the liver and biliary passages, gastrointestinal and respiratory tracts. The question is unsettled as to whether or not cancer frequency is greater for males than for females. Also, there is considerable doubt as to whether more people are dying from cancer in this generation than in earlier ones. The increase in the number of physicians and in diagnostic techniques entering into the recording of cause of death both tend to yield higher cancer mortality rates than in earlier decades. There is therefore no real basis for an assertion that cancer fatalities have increased. We must also consider the fact that methods of detection and treatment have effected many thousands of cures thereby decreasing the total of fatalities which might otherwise have resulted.

There are many complex variables involved in carcinomatous development. These factors are of concern to other investigators. In this study, the correlation offered concerns a statistical inference based upon geographical agreements in rates of cancer mortality and rates of rejection of Selective Service registrants for all types of recorded neoplasms. It must be assumed that in such examinations competent medical procedures assessed the potentialities involved insofar as carcinomatous development is concerned, in decisions to reject.

Recorded Neoplasms Among Rejected Registrants

Table 1 also shows a weighted ranking of rejections, by state. These data indicate that there is absolute positive correlation between the rejection rates for all recorded neoplasms among Selective Service registrants by REGION—thereby facilitating the type analysis intended by this study.

Regions I and II show this congruence strikingly. Thus, Region I, the East, ranks first for cancer mortalities as well as for the

frequency of all recorded neoplasms which were the basis for rejection of Selective Service registrants. Similarly with Region II, which ranks second. It will be noted, that Region IV, ranking fourth for cancer mortalities ranks third insofar as the frequency of all recorded neoplasms discloses. Here we must recognize that skin neoplasms have augmented the total of *all recorded* neoplasms considerably. These types of neoplasms and their evolutional cancers have been shown to be last on the national list in the order of significance as causes of cancer fatalities. Accordingly, although Region IV shows more neoplasms than Region III, the Far West, there are less deaths from cancers in Region IV than in Region III simply because the varieties of neoplasms involved are of the non-fatal types, with respect to skin neoplasms.

Summary and Conclusion

The type evidence presented, evolving from National statistics of cancer fatalities and Selective Service System rejections, leads to the rationalization that Negroes are much less likely to incur many types of neoplasms than whites. Table 1 shows many striking correlations. For example, Illinois reveals the highest number rejected per thousand for some form of neoplasm and also the highest cancer mortality rate. There are other such instances where the relative rank or position of a state for frequency of rejections and rate of cancer mortality is an identity. Massachusetts, Missouri and Minnesota exemplify this situation by ranking fourth on both counts. Similarly, Kentucky, Tennessee and Virginia rank fifth. There are inverse relationships too, as exemplified by Arizona which ranks first in cancer mortalities but last in rejection rate. It becomes important in such instances to eliminate potential sources of error in recording observations such as the condition of transient or non-transient. Arizona happens to be a state which invites many people in search of health improvement to take up residence there. The duration of such residence then becomes important to the analysis. It is important to know the period of residence specifically because geographic correlations of disease incidence and fatality cannot otherwise be comprehended.

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THE RED CROSS NEEDS OUR SUPPORT

The Navy Psychiatrist and the Return to Duty Problem*

By

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IN THE past fifteen years the entire problem of understanding the emotional impact of military life has come into increasingly sharper focus. During these critical years, the Armed Forces and the medical profession responded to the alarm that psychiatric casualties were of major military and economic significance. The physicians and administrative personnel developed common languages and pulled themselves more closely together as they tackled the problems of how to sort out men who would not adjust to the pressures of military duty. Various useful compromises were reached after rejecting large numbers of men of doubtful stability for a period then taking in too many "borderline" young men only to see them in trouble after a few days in basic training or boot camp. Real accomplishments were made in developing techniques of "psychiatric first aid" near the battlefield and on the ship while actively engaged with the enemy. To this end, the newly commissioned psychiatrist scrutinized his treatment armamentarium, and became aware of feeling grossly inadequate when he tried to understand and apply to highly specific acute situations near the scene of battle a kind of reflective long range psychiatric goal that he had considered important in his civilian psychiatric work. However, he adjusted to the new demands quickly and became expert at quick diagnosis and adept at sorting out which men could return to action immediately, who would need a period of planned relaxation or treatment, and who would have to be sent to a hospital facility.

With the cessation of hostilities and the return to peacetime military activities, the psychiatric needs of the armed services altered strikingly. New problems developed in the selection of suitable men and in the retaining of men in useful, productive assignments. Peacetime military duty does not often give rise to the feelings of intense anticipation which accompany life threatening situations that minimize the irritations of daily routines and greatly raise one's tolerance to petty personal issues. Instead, there is an emphasis on drill, discipline, training, and order without the immediate expectation that these activities will be put to the final test of performance in battle.

Men who look forward to the Navy for a life at sea to escape burdens of family and financial responsibilities often find themselves disgruntled and disillusioned and become angry and irritable. Sometimes, they become aware of an uneasy sense of guilt when they recognize their involvement in situations they hoped they had left at home with their civilian clothes.

A review of recent literature indicates a continued active concern with the general problems of adjustment to military life (see bibliography). Serious efforts at clarifying the usefulness of psychiatric screening at induction[5] and the reliability of predicted performance during service have made us more acutely aware of significant shortcomings. The disciplinary problems of certain types of men have provoked real concern about how to adapt our psychiatric knowledge of character structure to a military situation.[1, 2, 3, 4, 6, 7, 9, 10]

For several years now, the Services have been handicapped by a tremendous shortage of trained psychiatrists, most of whom are young Reserve Officers serving two years in the Military during various stages of their psychiatric training. However, at the beginning of their active duty period, they all

* The opinions or assertions contained herein are the private ones of the author and are not to be construed as reflecting the views of the Navy Department or the Department of Defense.

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TABLE 1

CLINICAL RECORDS STUDIED,
1 JANUARY, 1945-31 DECEMBER, 1954

*Total admissions to Neuropsychiatry Service	1250	
*Total discharges from Neuropsychiatry Service	1246	
Admissions given psychiatric diagnoses	1170	
Single admissions	1074	(92%)
Multiple admissions of 44 patients	96	(8%)
Psychiatric patients returned to duty status	545	(47%)

* Includes admissions with neurological diagnoses.

share an almost total unawareness of the special attributes of the role of the military psychiatrist. By the time they feel comfortable with their duties, they are on their way to become civilians once again. This paper is written with the aim of stimulating the new reservist to think about a specific major problem of Navy hospital psychiatry, the dynamics of returning a patient to active duty.

The issue of returning the psychiatric patient to duty brings into sharp focus numerous important problems for the military psychiatrist: his own feelings of security, his adjustment to military life, his ability to evaluate a new kind of patient in a highly specific life situation, his conception of good treatment, and an ability to prognosticate. The author became particularly interested in studying this area when on active duty at the U. S. Naval Hospital, Portsmouth, Virginia from 1954 to 1956. The study developed around the review of charts of all patients admitted to and discharged from the psychiatric wards of that hospital from 1 January, 1954 to 31 December, 1954 (Table 1). Particular attention was paid to the records of those patients who were admitted more than once during that year. In evaluating the data derived from these records, one must keep in mind certain important characteristics of the Neuropsychiatric Service to which these patients were admitted. This psychiatric service was the major facility for hospital treatment for all branches of the service over a wide area. In the immediate vicinity there are many large naval installations. A rapid turnover of patients was characteristic, with the admission rate between three and four patients per day. The emphasis was on the rapid evaluation and treatment of patients with the goal to set the course back to duty whenever possible. Patients in need of prolonged hospital care were transferred to a Neuropsychiatric Treatment Center.[8]

For our purpose, several aspects of Table 1 seem important. In the first place, a relatively high percentage (47%) of all psychiatric admissions were returned to duty status. Secondly, multiple admissions represented only 8% of the psychiatric admissions, and these were due to repeated admissions of 44 patients. This indicates that certain patients were singled out for another effort to return them to duty status but that following a second admission relatively few patients were sent back for a third try.

Table 2 compares the diagnoses of these multiple admissions to the group of single admissions to the psychiatric wards (diagnoses made at time of disposition from hospital, based on Joint Armed Services Nomenclature and Method of Recording Psychiatric Conditions, 1944).

To determine the significance of the differences in the percentages in these two groups of admissions, a statistical determination of "t" was made in each category. Only in the category "Psychotic Disorder" is it statistically significant ($t > 2.5$). This difference most probably reflects the fact that once a man has had a diagnosed psychotic illness it is rather unusual for him to be returned to duty status.

This table does not contain data indicating the disposition of patients, so one cannot compare the frequency of successful returns to duty in the various categories. However, one can say that those who were rehospitalized did not belong to any particular diagnostic categories but were distributed throughout the categories in a manner similar to the single admissions with the excep-

TABLE 2

DIAGNOSIS AT TIME OF DISPOSITION

Diagnostic Groups	Single	Admissions	Multiple	Admissions
Pathological Personality	187	17%	14	15%
Immaturity Reaction	391	36%	30	32%
Psychoneurotic Disorder	243	23%	30	32%
Psychotic Disorder	116	11%	6	5%
All other psychiatric diagnoses	137	13%	16	16%
	1074	100%	96	100%

tion of "psychotic disorder" as indicated above.

In attempting to understand why some patients return to duty and stay there and why others return to the sick list, one runs up against several obstacles. There is no way to be certain that patients who do not return to the hospital have remained on active duty. They may be on other sick lists and in other hospitals. There is but a rare opportunity to discuss with those men who successfully returned to duty how they were able to achieve this adjustment. Only those men who returned to the hospital can be studied in any detail. Under these circumstances, the earlier decision to return the man to duty can be reviewed and reconsidered. Has something been learned about how dispositional decisions are formulated and how hospital psychiatrists can contribute to the patient's successful return to duty? Yes, certain basic statements can be made that might serve to sharpen the thoughts of psychiatrists who are facing these problems for the first time.

The successful return to duty depends on a series of people and situations, occasionally a piece of good luck, but mostly, the patient himself and his efforts.

A most frequent problem is the emotionally immature young man at his first duty station who has a major problem dealing with the men in positions of authority over him. Aboard ship he appeared inept, stupid, too sensitive to criticism, a trouble maker, or a fellow unaccepted by his shipments. Often, he was put on the sick list as a gesture of desperation by those in command. In the hospital, his situation gradually unfolds. He frequently recounts stories that aboard ship he was misunderstood, teased because of his appearance or lack of aggressiveness, and given all the undesirable details and watches. He presents this in an outraged, complaining, yet hurt manner. There are indications that he would like to live up to expectations but that he has felt threatened and has retreated to the safer position of being misunderstood and has projected the blame for this situation onto his petty officer. He now recounts how he impulsively joined the Navy because of some misunderstanding at home with father or mother, that he wanted to be with his buddies, who were joining the Navy and that he wanted to be on his own. Now, the family expresses a need for him at home, and he feels they can work out their problems together since he can understand their viewpoint. The Navy, on the other hand, won't allow him any independence, and he states he simply cannot go back to that ship!

Now, this state of affairs gives rise to a variety of attitudes and reactions on the part of other patients, the psychiatrist and the ward staff. The patient makes known his attitude to his fellow patients many of whom initially feel they must, at least overtly, adopt a similar attitude to underline their own role as patients. The ward corpsmen are in the middle. Often they identify themselves very strongly with the patient and after sharing his story find it exceedingly difficult to maintain a realistic distance from

the plight he describes. At first they tend to be friendly and sympathize and share their doubts with each other. Then, if they note censure from the ward nurse or hear a varying story from the ward psychiatrist, they may do an about face and see the patient as a malingerer who has misrepresented himself to them and has taken advantage of their good intentions. This seems to occur most frequently when the patient doesn't look "sick" and doesn't present situations very different in kind from those faced by the ward corpsman. He is torn by his loyalty to the hospital staff who regard the complainer as a psychiatric patient on one hand and his loyalty to his fellow enlisted man on the other hand. His vacillations in attempting to work out this apparent conflict are often seen in his periodically closing his eyes to infractions of certain ward rules alternating with renewed efforts to run a "taut ward."

By reason of her status the nurse is often removed somewhat from the intimate ward situation and usually finds it easier to identify with the psychiatrist's position once this becomes clear. If her relationship with the ward corpsman is good, she can do much to help him out of his dilemma. If it is not, the situation is often confounded as the corpsman is left to his own devices.

Not infrequently, the psychiatrist has some trouble arriving at a position with which he is comfortable. Usually the psychiatrist entering the Service from civilian life tends to take the position that such a patient's emotional economy is in poor balance, that he may be a borderline psychotic, that he will become worse if forced to return to duty, and that he will do better if he is severed from the Navy and allowed to return home. If the psychiatrist makes this decision, very often the patient is profusely appreciative, becomes a model of ward behavior, and complains no more of his presenting somatic complaints or his anxiety. When the psychiatrist's case load is heavy, the promise of such symptomatic improvement is a lure hard to resist. There are good medical and military reasons to resist this temptation, however, because a false assumption is made in this argument, and then it is used to rationalize the conclusion.

In the first place, the psychiatrist has to remind himself of the need to conserve military manpower. When one man on a ward is released from the Navy with little visible personal inconvenience, there are clear indications that other men who had been considering return to duty begin to question their positions once again (11, 12). Inability to return to duty can become epidemic. In the second place, indications that the patient will do better when he returns home are few indeed. The contrary clinical evidence from the psychiatric wards of the Veterans Administration Hospitals suggest that the patient only transplants his neurotic conflicts once again to civilian soil. One very frequently hears from the patient that he wishes he had been retained in the service in spite of his symptoms and his protests.

Now, turning to certain clinical details of the patient, we often find that his initial decompensation at duty was related to his ambivalence toward authority and figures in authority. Sometimes we hear that he found himself on the sick list and on the way to the hospital with relatively little understanding of where he is headed and what is to be expected of him. Usually the medical officer has discussed the situation with the patient, but it is clear that he does not appreciate the implications of hospitalization. Frequently, he doesn't know he is to come to a psychiatric ward, and he usually has no idea about what to expect from his contact with the psychiatrist. Under these circumstances the authority conflict is given further impetus, and the patient becomes hyperalert to adduce evidence that the hospital staff is hostile. The struggle aboard ship then continues in the hospital with corpsman, nurse, and psychiatrist.

Generally, the most important element that determines the patient's willingness to return to duty is his relationship with the psychiatrist. A cardinal element in this relationship is the psychiatrists attitude toward the patient's eventual disposition from the

hospital. If the medical officer has a well defined attitude toward his patients returning to duty for a second try, he has already begun to set the stage for successful treatment. Of course, the conviction the psychiatrist has about this decision depends on his clinical appraisal of the patient. Here, a few points of difference from civilian practice should be emphasized. Very often the patient's symptomatic behavior appears quite extreme, and we may feel we are dealing with a man whose ego is fragmented and incapable of exerting effective control. The angry and frightened adolescent in conflict with authority can be responsible for the most startling symptoms and the most frightening behavior. When they are out of the conflictual situations, the ego seems to exert its integrative function with reasonable effectiveness, and it is hard for the observer to imagine the previous disturbed behavior. In this connection, it should be mentioned that the adolescent in turmoil develops some of the most disordered, violent, and bizarre behavior under the influence of alcohol, such that without the necessary history and high index of suspicion a diagnosis of acute catatonic excitement would seem appropriate to the uninitiated psychiatrist.

The psychiatrist by taking the position that the passive and aggressive patient should return to duty necessarily brings into focus the patient's difficulty in dealing with authority. In a firm yet non-punitive manner the psychiatrist can begin to point up current ways in which the patient is inappropriately acting out ancient conflicts with authority. It is this very development that exposes the often raised rationalization that the patient will do better if he is allowed to return home a civilian. The history usually reveals that the patient left home initially for just these reasons. The successful exposure of this issue might allow the patient to make the very first step toward more mature behavior. The psychiatrist cannot bypass the conflict by seduction. The patient becomes more realistic in his behavior as he begins to make partial identifications with the consistent reliable figure of the medical officer, not because the medical officer is trying hard to be a buddy and different from all other naval officers with whom the patient has had contact. However, at some point in this process, the patient will very likely experience a return of his anxiety or the various symptoms noted on admission. The psychiatrist should not immediately regard this as evidence that the patient is becoming worse or that he is too fragile to return to duty. However, the psychiatrist should point out repeatedly that he recognizes the man's questions and misgivings about leaving the security of the hospital for the unknowns of a new duty assignment and that he fears a repetition of previous conflicts experienced aboard his former ship.

It is during this phase that the crucial issue is actually settled. The psychiatrist must make quite explicit the fact that within a certain number of days the patient will return to duty. Sometimes he might be tempted to send the patient on very short notice with no discussion or even allow the patient to be informed by someone else that his name appears on the duty party. Such a maneuver is certainly not effective in helping the patient deal with his problem relationship to authority, and whenever it is used it suggests the psychiatrist feels threatened by the patient's symptoms or attitudes. It also suggests the psychiatrist himself is guilty about his decision. His guilt seems to be related to some recognition that the return to duty decision has in it an element of retaliation against the patient because of his particularly burdensome symptoms or troublesome behavior in the hospital. Once the decision has been made, the psychiatrist is in a freer position to discuss with the patient his reactions unhampered by the idea that the disposition will be based on what is said during the subsequent interviews.

The termination of the hospital stay, then, should be considered in psychologically dynamic terms just as the termination of any dynamically oriented psychotherapy. Even though the patient's hospital stay has been short and the personal contact with the psychiatrist has been infrequent, the error is

usually in the direction of underestimating the significance of the relationship.

It is not easy to spell out the pertinent clinical data which suggest that a patient can be successfully returned to duty status. It does seem clear, however, that the characteristic we identify as motivation is of major importance. If the patient sees completing his duty time as a matter of pride, or personal satisfaction, or even something to be done as his part of a contractual agreement, one can feel more optimistic. One looks for assets in his personal history, his family relationships, and his social adjustment prior to enlistment. One acquaints himself with his hospital ward adjustment and how realistically he relates to fellow patients, corpsmen, and nurses. Are there indications that he is making a positive identification with you as his medical officer and someone attempting to help him deal with his adjustment problem? If the patient measures up well under these criteria, he probably stands a good chance of remaining at duty. In assessing this clinical problem, the psychiatrist will do well to remember that the binding spirit of the group feeling, a sense of group identity, provides the patient with a major ego ally that is not usually so available in civilian life. This very often allows the patient to face situations he would shrink from if he felt he were alone. There is no question that men with quite significant psychopathology are able to make a good adjustment to military life because of the integrative effect of their identification as a member of a working team.

Study of the dates of admission of the Multiple Admission group shows that 86% were readmitted within three months of their hospital discharge, and 56% within the first month. This period immediately following hospital discharge certainly seems crucial. During this period, the patient passes through the receiving station and is reassigned, or he is returned directly to his previous duty. It looks as if once this adjustment period is passed, the major deterrent has been overcome. It is for this reason that a clear and direct hospital summary should be in the patient's health record. If the medical officer at the receiving station or next duty station can understand and ally himself with the proposed objectives of treatment, he may be a major determining factor in the former patient remaining at duty.

In reviewing the circumstances around readmission there was no one error in the previous hospital evaluation to which one could attribute the man's return to the hospital. A recurrence or continuation of symptoms responsible for the original hospitalization led to the readmission. In all but a very few instances rehospitalization seemed unavoidable. In those instances the man was in a situation where no one knew him. Return to the hospital suggested itself to the man and to those to whom he turned for help as the most expeditious move in light of the recent hospital discharge.

Once the patient was readmitted, it was the exception for him to be returned to duty again. However, there were several selected young men who were returned to duty several times before making the grade. Such efforts are expensive when calculated according to manhours spent, but a few such successes provide the hospital staff a morale boast and a sense of accomplishment. At the same time, the patient may experience his achievement as a very meaningful communication that authority figures are not so devastating and that they are not devastated by their previously thwarted dealings with him. Word of such success also spreads to his shipmates in a manner quite as epidemic as a signal failure. In this way, the effort is a good public health investment.

This paper has been addressed to one major aspect of returning the patient to duty, the management of the struggle with authority. Though this conflict is most overt with many poorly integrated adolescent characters, it is usually seen playing important roles in the precipitation of depressive and anxiety symptoms as well as the psychotic disorders which so often seem classically atypical and related to specific military situations. It is suggested that a vigorous ward team psychotherapeutic effort focusing in

this conflictual area can be used in an effective way to rehabilitate the man who becomes a psychiatric casualty in the military setting.

Summary

Military psychiatry has been able to make significant contributions to the management of emotional disturbances occurring during battle conditions.

Peacetime military life poses special emotional problems for troops and for newly commissioned reserve medical officers practicing psychiatry.

An impressive number of hospitalized psychiatric patients can be returned to duty through the concerted efforts of the psychiatric ward medical team.

The conflict with authority in a central conflict with many patients with emotional disturbance in the military setting. To deal with this effectively, the psychiatrist must be secure in his own role. The relationship with the psychiatrist is a major factor in determining the patient's successful return to duty.

The authority conflict is important in a variety of reactions and can be dealt with to advantage in short term psychotherapy.

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Outpatient Neuropsychiatry in USAREUR:* Problems, Patients and Therapy

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PATIENTS with primary psychiatric complaints comprise a significant proportion of any out-patient group. Many, if not the majority, of patients with definite organic diseases, develop significant psychiatric symptomatology at some time during their illnesses. The management and the relief of psychiatric symptoms is of considerable concern to any practicing physician.

In civilian practice, because of reluctance on the part of the patient and often of the physician as well, together with limited finances and facilities, psychiatric referral is neither common nor often feasible. Consultation requests are often limited to the intractable patient. The psychiatric care of the majority of patients lies exclusively in the hands of the general practitioner, internist and general surgeon.

In the military setting, consultation is more readily available and more frequently utilized. During an eighteen-months period at an overseas installation, it was possible to see and evaluate a large number of patients who had disturbing but not significantly disabling symptoms. With rare exception, these patients were able to continue their normal life patterns without remarkable alternation. Because the patients were similar to those seen by most physicians, the results obtained would seem to have a definite general application for most practicing physicians.

The opinions expressed in this paper are those of the author and do not necessarily reflect those of the Surgeon General of the Army, Department of the Army or Department of Defense.

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SETTING

Since the setting had a direct influence on both the nature of the practice and the problems of the patients, a discussion of it is pertinent. Our clinic served a population that is not typical of the average civilian community nor even of most military establishments. The hospital is located approximately sixty miles from the Czechoslovakian-East German border. In addition, a substantial proportion of the troops supported are based only thirty-five miles from the border. Their dependents are billeted with them.

Most of these units spend considerable time in nearby training areas, and in addition, a significant number of the troops are on frequent border patrol. This combination of combat-ready troops, accompanied by dependents, and in close proximity to hostile territory, is unique. It is not unique in Germany, however, since the majority of the troops there are in such a situation. This situation is an important factor in the emotional problems of many soldiers and dependents.

The government has deemed it feasible and desirable to have the dependents with the troops. However, the unit commanders frequently place upon their men demands that approach those of combat. To some, these demands seem arbitrary at times. Constant alert status, travel restrictions, long hours, and frequent field problems are often part of the daily fare. A man in combat, away from his family and not daily reminded of his family responsibilities, can accept this. Likewise the dependent at home, with the support of her family and friends, in a familiar environment and faced with a cause, is often better able to accept the separation. But in

the above situation, when demands seem to be unreasonable, discontent often results. Such discontent frequently combines with the usual overseas stresses, including separation from family and residence in a strange country to aggravate or create emotional tension.

This tension is further aggravated by the stress of proximity to the border. However, anxiety arising from the day-to-day problems related to the living situation seems to be paramount, rather than any anxiety associated with fear of outbreak of hostilities. The situation for the GI in the barracks parallels that of the soldiers with their families. It was difficulty in adjusting to those with whom they lived that brought the patient to us. Once may speculate on whether this is really a reflection of anxiety arising from the fear of open war. It is our impression that it is not.

Patients

Our discussion will deal with the 872 unselected consecutive out-patients seen personally at the Neuropsychiatric Clinic of the U. S. Army Hospital, Nürnberg, Germany, during the eighteen-months period from July 1956 to December 1957. These patients are divided into three main groups (Table 1).

The first group consisted of 450 patients, comprising 52%, who were seen for evaluation alone. At the time of referral, only an opinion was expressed, and no further follow-up seemed indicated. This group, which included pre-trial examinations, pre-adoption interviews, OCS examinations, and similar administrative evaluations, would seem to represent a heavy load of administrative work. However, the number of administrative board evaluations, a reliable index, was low. Fifteen per cent of the total number of patients were seen for evaluation for administrative boards.[1,2] This low figure is due to continued effort to maintain a close contact with the unit surgeons, who were encouraged to assume much of the administrative load.

Table 1

General Classification of 872 Consecutive Patients Seen

	No.	% of Total
1. Evaluation	450	52
General Evaluation	(313)	(36)
AR 635–208	(73)	(8)
AR 635–209	(64)	(7)
2. Treatment Candidates	295	34
3. Neurological	127	14

With few exceptions, only patients with a real possibility of psychiatric difficulty were referred. Although there was a significant portion of administrative work, it is our impression that the high number of evaluations is actually a result of the instability of the military environmental situation. (In many instances, follow-up was impractical because of frequent changes of station, referrals from the training areas, and the inconvenience of distance.)

Neurological Patients

The second group considered here comprises one hundred and twenty-seven outpatients seen for neurological evaluation. Those who were neurological referrals but who were felt to have definite psychiatric disease were not included. The two major diagnoses were epilepsy (20%) and peripheral neuritis (20%); 24% were found to have no definite neurological disease. In the remaining 36%, the diagnoses were varied, and included patients with Parkinson's syndrome and multiple sclerosis.

Treatment Candidates

In the third group were 295 patients who, when seen initially, were felt to be candidates for therapy and for follow-up in our clinic. Although several of these patients were hospitalized at times, this was usually for initial evaluation or because they were received in transfer. Stays were brief and in all instances care was essentially on an out-patient basis. In order to determine therapeutic results, these patients were classified on the basis of their most prominent symptoms (Table 2).

TABLE 2

DIAGNOSES OF TREATMENT CANDIDATES (295 CASES)

Diagnosis	No.	% of Group
Anxiety	136	46
T. Headache	43	15
Depression	35	12
Alcoholism	27	9
Schizophrenia	23	8
Childhood Behavior	13	4
Conversion Reactions	12	4
Miscellaneous	6	2

The largest group consisted of those patients with anxiety predominating. In decreasing frequency, other classifications were tension headaches, depression, chronic alcoholism, schizophrenia, childhood behavior problems, and conversion reaction. An additional six patients with rather ill-defined conditions, felt to have a psychogenic origin, are included in the miscellaneous group.

Of the 295 treatment candidates, ten did not return for follow-up. In the evaluation of results of therapy, these patients were classified under "not improved." The remaining patients were followed for at least one month, usually on a weekly basis. Average follow-up was slightly over three months. Evaluation of the results with children and alcoholics is not included in the discussion.

THERAPY AND THERAPIST

For the purpose of critical analysis, each group is divided on the basis of the type of therapy received. Chlorpromazine and reserpine were the drugs most frequently used. Meprobamate became available during the last six months of the study and was used on a limited number of patients. In those receiving drugs, the dosage was gradually increased until maximum benefit or undesirable side effects were obtained. Some of these patients received higher doses at times, but the figures given are for the optimal daily dosage.

Some attempt was made to provide psychotherapeutic support in addition to any medication that was given. Since patients who upon evaluation appeared to be suited for psychotherapy were not given drugs initially, those patients who received psychotherapy alone undoubtedly included the better candidates for psychotherapy.

Psychotherapy was usually at a superficial supportive level. Psychiatric orientation of the therapist, who had only limited training, was essentially dynamic. He had had previous experience in the field of general medicine. In many instances, but not in all, there was naturally a tendency, when drug therapy was used, to rely somewhat less on psychotherapy. This was due in part to the limitation of time resulting from the large patient load.

ANXIETY

In the anxiety group there were 136 patients, who received one of six different types of treatment (Table 3). Patients in this group characteristically presented themselves with complaints of irritability, tension, apprehension, and emotional lability.

Thirty-four of the patients in this group received reserpine in varying doses. If the dosage was .75 mg or less, results were no better than would be expected from a placebo, and the results with larger doses than this are only questionably significant. We base this conclusion on the thesis that up to 50% of psychiatric patients will usually improve on placebo alone.[3]

Sixty-four patients received chlorpromazine. Favorable results were not obtained until a dosage of 75 mg was reached. The results at this level, in which 76% of the patients showed some improvement, is felt to be significant.

Discouraging results were obtained in the nine patients treated with 1600 mg meprobamate daily. Those patients who were receiving low dosages that showed more than minimal improvement are felt to have had an increased susceptibility to the placebo effect.

Five patients received at different times both chlorpromazine and reserpine in the lower dosage range without significant difference in the amount of relief.

TABLE 3

RESULTS IN 136 PATIENTS WITH ANXIETY

Therapy	No.	% Not Improved	% Improved	% Minimal Improvement	% Moderate + Marked Improvement
Reserpine	34	56	44	26	18
.50 mg	10	60	40	10	30
.75 mg	15	60	40	27	13
1.0–1.5 mg	9	44	56	45	11
Chlorpromazine	64	41	59	22	37
50 mg	18	67	33	0	33
75 mg	29	24	76	38	38
100–150 mg	17	41	59	18	41
Chlorpromazine and Sedation	6	0	100	33	67
Meprobamate	9	78	22	22	0
Sedation	4	0	100	75	25
Psychotherapy	19	16	84	42	42

Two additional patients, who were severe, incapacitated neurotics, had neither received significant relief on previous intensive psychotherapy nor on moderate dosages of both chlorpromazine and reserpine. They did, however, receive rather remarkable relief without side effects when placed on a combination of 75 mg of chlorpromazine and 100 mg phenobarbital daily. This combination, which was given to a total of six patients, warrants further investigation. These six patients were the only ones that showed results more favorable than the group with pschotherapy alone.

TENSION HEADACHES

Forty-three patients who presented themselves with tension headaches are included in this series (Table 4). An organic basis, including hypertension, was ruled out in all cases as a cause of the symptoms. The results obtained with chlorpromazine and meprobamate regardless of dosage, were not felt to be significant, and these drugs would seem to have no place in the treatment of this condition. However, reserpine produced significant results at a dosage of .75 mg, results that were similar to those obtained with psychotherapy alone. In our experience, ten-

TABLE 4

RESULTS IN 43 PATIENTS WITH TENSION HEADACHES

Therapy	No.	% Not Improved	% Improved	% Minimal Improvement	% Moderate to Marked Improvement
Reserpine	22	41	59	18	41
.50 mg	4	50	50	25	25
.75 mg	9	22	78	11	67
1.0–1.5 mg	9	56	44	22	22
Chlorpromazine	9	56	44	44	0
50 mg	4	50	50	50	0
100 mg	5	60	40	40	0
Meprobamate					
1600 mg	2	50	50	0	50
Psychotherapy	10	20	80	30	50

TABLE 5

RESULTS IN 23 PATIENTS WITH SCHIZOPHRENIA

Therapy	No.	% Not Improved	% Improved	% Minimal Improvement	% Moderate to Marked Improvement
Chlorpromazine	15	7	93	7	86
50 mg	4	25	75	0	75
75–150 mg	11	0	100	9	91
Transfer	2	0	100	0	100
Psychotherapy	6	50	50	16	34

sion headaches appeared to be the one psychiatric condition in which reserpine might be indicated.

SCHIZOPHRENIA

Twenty-three patients were seen who were classified as schizophrenics (Table 5). This included instances of borderline severe schizoid and paranoid personality disorders as well as the pseudoneurotic type. Difficulty in socialization, confusion, circumstantiality, vagueness, ideas of reference, and withdrawal were common findings. Almost all patients were remarkably improved regardless of type of therapy. However, chlorpromazine in particular appeared to decrease the anxiety of the patients in this group. Those patients that were not helped by psychotherapy alone were dependents with severe chronic paranoid personality disorders. These results reflect both the chronic and often easily alterable pattern of schizophrenia.

DEPRESSION

Thirty-five depressed patients are included (Table 6). These patients frequently showed anorexia, sleep disturbances, apathy, suicidal thoughts, and feelings of futility and unworthiness. In this group, chlorpromazine appeared to be of definite help when dosages of 75 mg were reached, and results with 100 mg were more beneficial. Combinations of chlorpromazine with both sedation and amphetamine were likewise useful in the few patients that received them. The results with Dexamyl and meprobamate are equivocal. In the few patients treated with psychotherapy alone, satisfactory results were obtained.

CONVERSION REACTIONS

Twelve patients were seen with conver-

TABLE 6

RESULTS IN 35 PATIENTS WITH DEPRESSION

Therapy	No.	% Not Improved	% Improved	% Minimal Improvement	% Moderate to Marked Improvement
Chlorpromazine	15	33	67	13	54
50 mg	4	50	50	0	50
75 mg	5	40	60	40	20
100–150 mg	6	17	83	0	83
Chlorpromazine and Sedation	4	0	100	50	50
Chlorpromazine and Amphetamine	3	33	67	33	33
Meprobamate					
1600 mg	6	50	50	0	50
"Dexamyl"	4	50	50	0	50
Psychotherapy	3	33	67	0	67

sion reactions varying from episodes of amnesia to mutism and paralysis. The onset was in all instances related to acute problems, and recovery in all instances was complete. However, in four there was a recurrence. Two of these patients were dependents who had had a history of hysterical seizures for many years. Their attacks occurred when they were separated from their husbands. Both of the husbands eventually requested transfer. The third patient was a soldier with borderline intelligence who developed recurrent symptoms in spite of 75 mg chlorpromazine a day. This man was the only one of this group that received any medication, and he was eventually separated from service administratively.

The fourth patient was originally seen after he was separated from his girl friend, and when they were reunited he recovered completely. However, several months later, he was hospitalized again at another installation because of a similar stress, and air-evacuated to the United States and eventually to a veterans' hospital, before a reunion could be accomplished with his German girl friend. Reactions of this type are most frequently related to acute external stress. When the stress is removed—when there has been an opportunity to verbalize, or sufficient time has elapsed for the patient to "save face"—a recovery is usually complete. Drug therapy appears to have little place in the treatment of these patients.

Side Effects

Side effects with chlorpromazine, reserpine and meprobamate were relatively frequent but minor in character (Table 7). In most instances it was not necessary to discontinue the drugs. To avoid suggestion, no attempt was made to question the patient specifically. However, when a possible side effect was complained of, a notation was made of it. Almost all of these patients were receiving a moderate dosage. Two patients on chlorpromazine, in whom a rash had developed, were restarted on the same medication successfully some months later without incident. No serious side effects were encountered, and all three drugs appeared to be relatively safe. Several patients complained of no effect, claiming that they were receiving sugar pills or aspirin.

Table 7

Side Effects

	No.	%
Chlorpromazine (16 of 120 Patients)		13
Gastrointestinal	6	5
Drowsiness	4	3
Headache	4	3
Rash	1	1
Dizziness	1	1
No effect	4	3
Reserpine (6 of 59 Patients)		10
Gastrointestinal	3	5
Insomnia	2	3
Dizziness	1	2
No effect	1	2
Meprobamate (3 of 17 Patients)		
Drowsiness	3	18

Environmental Manipulation

We have mentioned the results with psychotherapy and available medications. These both have a definite place in military psychiatry. However, another important adjunct to therapy was environmental manipulation. This included job reassignment, unit and geographic transfers, and adjustments in the family and its living situation. In many cases this factor was decisive, perhaps most important, and yet it was frequently most difficult to utilize. There are some reasons for the non-availability of this factor in the military. These include the necessity of some rigidity in the military setting, and stabilization of those with specialized job training. Another reason is abuses of duty limitations and transfers.

The Army is somewhat reluctant to approve reassignments or transfers even with medical recommendations. Sincerity and conscientiousness on the part of medical officers often helps to overcome this attitude. The use of environmental manipulation would appear to be not only highly beneficial in civilian practice as well as in the military, but frequently more readily available.

TABLE 8

OVER-ALL EVALUATION OF THERAPY

	No.	% Not Improved	% Improved	% Minimal Improvement	% Moderate to Marked Improvement
Chlorpromazine	120	33	67	23	44
75 mg or over	90	26	74	28	46
Reserpine	59	51	49	24	25
.75 mg or over	45	49	51	27	24
1.0 mg or over	21	52	48	33	15
Meprobamate					
1600 mg	17	65	35	22	12
Psychotherapy Alone	49	20	80	37	43

OVER-ALL RESULTS

Although many of the patients were definitely helped by the regimen given, there were many individual variations. As with any similar group of patients, response of symptoms to therapy was highly variable and evaluation frequently difficult. In the military, the degree of motivation for improvement is of prime concern, and of course, directly contributes to the significance of any favorable results obtained. Realizing that secondary gain is important, we did not accept subjective evaluation alone as the criteria of improvement. Evaluation of unit and social adjustment changes in daily habit patterns, subjective and objective estimation of emotional tension, and apparent comfort, were important factors considered. Similar criteria were applied to the dependents who comprised approximately 30% of the treatment group.

In Table 8, the results obtained with the four main regimens are summarized. In a selected group of patients who received only psychotherapy, the best results occurred. Comparable results were found when chlorpromazine was used in a daily dosage of 75 mg or more. Reserpine in general was less beneficial, and results did not vary significantly with variation in dosage. Meprobamate, in a more limited series, gave the most disappointing results.

SUMMARY

Experiences with 872 out-patients treated in the neuropsychiatric clinic of an overseas Army hospital are reviewed. The types of practice and problems encountered, along with the relationship to the setting, are discussed.

The results in 295 treatment cases are considered. Emphasis is placed on the results obtained through the use of psychotherapy, chlorpromazine, reserpine and meprobamate. Psychotherapy in forty-nine selected cases produced the best results.

In a group of 120 cases, chlorpromazine was definitely beneficial both in over-all results and specifically in patients with anxiety, depression and schizophrenic syndromes. Seventy-five mg of chlorpromazine daily is established as the minimal optimal dosage. A combination of this drug with sedation may be useful.

Except for its use in tension headaches, reserpine in fifty-nine patients appeared to have no significant beneficial effect. A minimal daily dosage of .75 mg is recommended.

Meprobamate in a limited series of seventeen cases was ineffective at a daily dosage level of 1600 mg.

Side effects, although relatively frequent, were minor in nature in all instances.

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Nurses in General Hospitals Can Contribute to Rehabilitation*

By

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A MEDICAL dictionary published in 1949 defined rehabilitation as "The rendering of a physically or mentally handicapped person fit to engage in a remunerative occupation." While this definition is still basically correct, modern rehabilitation goes farther by seeking to restore the chronically ill, the aged and the long-term convalescent patient as well as the physically and mentally handicapped. In addition, rehabilitation no longer limits itself to helping the handicapped earn a living; it strives to assist him to live and to work in a normal environment and to do this with complete understanding of his limitations as well as his capabilities.

Re-defining this phase of medical practice became necessary as a result of medical and social changes in the care of the sick. The increase in the number of chronic diseases, disabilities resulting from injuries, and the aging population brought about a need for a planned program of rehabilitation that would help these individuals enjoy a useful life in a normal setting. Modern rehabilitation helps the handicapped take his place in society as soon as possible and discourages institutional and segregated living.

How does this concept of medical care affect nurses and nursing in the general hospital where the emphasis, of necessity, is placed on the care of the actually ill? Every nurse, whether she works in an orthopedic ward, a recovery ward, or whatever it may be, is aware of the important work done in rehabilitating the disabled and the handicapped. However, there is still a tendency to think of rehabilitation as something apart from hospital patient care, performed in some remote section of the hospital where hydrotherapy, gymnasiums and potter's wheels flourish. Rehabilitation is more than this—it is a dynamic concept of medical care that starts with the initial onset of the illness and exempts no disease or age group. Dr. D. Elliot O'Reilly states, "Rehabilitation must start with admission to the hospital if the patient is to receive maximum benefit. Much time is lost if the process of rehabilitation is delayed until the end of all definitive treatment. Therefore a rehabilitation program can play a very important role in a general hospital."[1]

THE REHABILITATION TEAM

This philosophy of patient care requires the complex utilization of all of the medical and social resources available to the hospital and the community. Rehabilitation cannot be delegated to any one department or section of the hospital—it must be a concept accepted by all members of the medical-care team. In the general hospital the patient is usually most dependent upon the doctor and the nurse for his treatment and care. As in all phases of medicine, the physician is the leader of the rehabilitation team and as such he plans and directs the program of care. Other members of the team who render care and support include the professional nurses, physical therapists, occupational therapists, social workers, psychologists, chaplains, auxiliary nursing personnel, and volunteer workers. All members must have a mutual appreciation and understanding of the contributions being made by their fellow team members, as well as a complete understanding of the goals for the patient as planned by the doctor.

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The Nurse's Responsibility as a Team Member

Nurses in a general hospital have a unique opportunity to participate in the patient's rehabilitation. The patient spends many long days in the hospital ward. Patients learn about their care from the nursing service personnel and, in turn, the nurse is very likely to be in a position to recognize and interpret the signs that indicate a patient who is in need of the assistance of trained rehabilitation personnel. This assistance may require the services of many members of the rehabilitation team. On the other hand, it may simply require intelligent encouragement from the nurse to bring about a desire on the part of the patient to return to a state of health and well-being. In either case, the nurse must be aware of the patient's needs and interpret them accordingly. The success of the team approach to rehabilitation may depend upon the degree to which the professional nurse can function as a team member.

Rehabilitation nursing utilizes all of the basic principles and techniques of good nursing care as well as the techniques of rehabilitation. The responsibilities of nursing in rehabilitation might be listed as follows: (1) carrying out the treatments and procedures ordered by the doctor; (2) providing the physical care and comforts for the patient; (3) observing and reporting the patient's mental and physical condition; (4) coordinating the patient's plan of care with other members of the rehabilitation team; and (5) developing good communication between the patient, team members and the patient's family.

During the acute stages or at the onset of the patient's illness, the immediate needs of the patient demand most of the nurse's attention. It would be unrealistic to consider rehabilitation for a patient admitted with a bleeding ulcer before the hemorrhage was controlled. However, the attitude of the ward personnel toward the patient and his family during the trying hours of the illness are a part of rehabilitation. The understanding and sureness with which the nurse carries out procedures will be communicated to the patient and will provide security for the existing emergency and confidence in the future. The ability and skill of the individual nurse must be augmented with the services of the auxiliary personnel, and it is the professional nurse's responsibility to teach them the importance of providing an atmosphere that is conducive to rehabilitation.

Case Report

Mr. Smith, age 51, was a self-made man and a successful executive. He was brought into the general hospital after having suffered a cerebral accident at his home. It was soon obvious that his right side was paralyzed, he was experiencing some speech difficulty, and above all, he was depressed. His family, friends and co-workers hovered over him, wondering what they could possibly do to help this man regain his health and status. The more they displayed their anxiety the greater became Mr. Smith's depression. He became very demanding and irritable. As soon as possible he was started on a program of rehabilitation. After the patient was carefully studied, the doctor explained to Mr. Smith and his wife what he might or might not expect in the way of recovery. The nurse obtained literature for them to read in order that they could better understand the disability and have some knowledge of the rehabilitation potential. This sharing of information had a profound effect on the family and friends. They were no longer the mourners; they became actively interested in helping Mr. Smith get well.

The patient appeared to be most embarrassed and distressed because of bladder incontinence. The nurse instructed Mr. Smith and the nursing service personnel caring for him of the importance of emptying the bladder at regular intervals and a schedule was planned for this purpose. After a few weeks of rigidly adhering to the schedule the patient developed a bladder control whereby the bladder emptied at periodic intervals. Nursing service personnel were thoroughly instructed by the nurse in giving special skin care to Mr. Smith in order to prevent decubi-

tus; to position him, using foot boards and pillows, in order to prevent contraction and deformities. The nurse recognized that Mr. Smith's emotional problems tended to preclude a receptive attitude toward treatment and rehabilitation. She discussed this with the doctor and a conference was arranged with the physical therapist, occupational therapist, and speech therapist. It was concluded that Mr. Smith should start on a program of physical, occupational and speech therapy promptly, but because of his emotional disturbance these therapies were to be integrated as the patient exhibited readiness for them. The nurse was requested to keep the various services informed of the patient's progress and to encourage him to accept their assistance. In the meantime the patient was to start performing acts of self-care on the ward, such as washing his face, combing his hair, shaving and feeding himself. At first Mr. Smith preferred to have these details performed for him, but when he realized that the nurse or auxiliary worker wanted to teach him to help himself he demonstrated an interest in working with them to obtain better coordination. Mr. Smith eventually became an enthusiastic participant in the rehabilitation program. Before leaving the hospital to complete his rehabilitation at home, he told the ward nurse that he would be willing to return to visit other patients with similar disabilities to offer encouragement and advice. From helplessness and complete dependence, he progressed to self-care and self-respect. Through a well-planned program of rehabilitation, this patient was able to return to a life of usefulness instead of facing the years ahead as an invalid.

Approach Toward Independence

There is a delicate transition from a state of complete dependency in acute illness to a desire for independence. The patient may feel slighted because he is receiving less attention or fears that he will do himself harm through performing an unaccustomed activity. On the other hand, the nurse on a busy ward may find it less time consuming to perform a procedure for the patient than to teach him to do it for himself.

In discussing the role of the nurse in rehabilitation, Virginia Henderson states:

"If throughout the care of each patient, the nurse bears in mind the goal of helping him to retain his independence in breathing, eating, eliminating, sleeping, moving, dressing, communicating, and establishing satisfactory human relationships—in other words, carrying on his daily activities—she is taking a leading role in his rehabilitation."[2]

Ward Planning for the Future

Until recently there was little planning of the rehabilitation services in general hospitals. The long-term or chronic patient tended to get "lost" in the active, busy hospital ward. However, the increased numbers of these patients created a medical-social problem that had to be solved at the community level. Rehabilitation centers that are for disabled patients such as paraplegics and quadriplegics, would not be economical or practical for most of the chronic or less severely handicapped persons. Therefore general hospitals designed for the future are planning rehabilitation areas within or adjacent to the general hospital. These plans not only include physical therapy and occupational therapy rooms and equipment and offices for other rehabilitation team members, but the patient's living quarters are designed to facilitate rehabilitation. Beds are low so that the patient may get in and out with ease. Spaces between beds and doorways are sufficiently wide to allow wheel chairs to enter easily. Toilets and bathing facilities are constructed with the disabled person in mind. The fact that recognition is being given to the inadequacies of existing facilities is half the battle. Many hospitals now under construction are approaching the problem realistically, and there will certainly be many changes in general hospitals of the future.

The Existing Situation

Providing for rehabilitation within the framework of hospitals as they are now con-

structed requires the effort and interest of all team members. Separation of the acutely ill patients from those who are recovering should be accomplished wherever possible for the following reasons: (1) the activity of convalescent patients may be disturbing to the sick patient; (2) the seriously ill patient requires a major portion of the time allotted for nursing care, leaving only minimal or self-care to the convalescent patient; and (3) the atmosphere of the ward tends to be tense where the personnel are caring for acutely ill patients—an atmosphere that is not conducive to good rehabilitation. The problem of providing for rehabilitation in general hospitals was brought out by Dr. Howard A. Rusk in a discussion of geriatric patients. He stated that the very nature of the general hospital, whose primary mission is to provide definite care of the acutely ill, means that the basic needs of the geriatric patient often go unmet because of the pressures on the staff to provide acute care first.[3] This statement is applicable to other age groups and disabilities facing the problem of rehabilitation in the general hospital setting. Much had already been accomplished toward grouping those who are recovering apart from the more seriously ill. However, this has been done in the past largely from the standpoint of utilizing the nursing service personnel more effectively and providing better care for the sick patient. Certainly this is a mandatory approach to good patient care, but the nursing needs of the patient during rehabilitation will deserve more emphasis in the future.

Morale and Environment

Rehabilitation is a slow process. Keeping the patient mentally active and interested will help him through his periods of depression and discouragement. Books, magazines, radios and television are usually available if the need is known. Both male and female patients appreciate the psychological lift given by the services of the barber or the beautician. Other patients who have progressed in their recovery are often willing teachers and enjoy being part of the rehabilitation team. Above all, the family should be included in the patient's program for recovery—a realistic and honest approach to the family will reap endless benefits in total rehabilitation. Good morale and a pleasant environment are basic —certainly the nursing service is in a better position to provide this atmosphere than any other group of people.

Rehabilitation nursing in the general setting is not dependent upon costly equipment and specially designed buildings. It is woven into every aspect of patient care no matter where or under what circumstances this care is given. Successful rehabilitation is a thrilling experience for the patients and encouraging for the team members. Nurses can contribute immeasurably in assisting these patients live fuller lives in spite of illness and disabilities, and will find added satisfaction in their work—knowing that they have helped restore these individuals to an independent existence.

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EDITORIALS

Hepatitis

AN INCREASE in infectious and serum hepatitis during 1958 should alert us to the dangers of this disease and urge us to take whatever steps are known to control it.

"Viral hepatitis" which seems to be the preferred term is not to be considered lightly. People die from the disease. As soon as the disease is recognized, and the sooner the better, the patient should be confined to bed and treatment started. While there is, as yet, no specific medication known, supportive measures are indicated and confinement to bed is necessary until laboratory tests show the patient to be at the level where he may again be ambulatory.

It has been known for some time that the disease is due to a filtrable virus. Recently Dr. Karl Fellinger at the Vienna Hospital, Austria, stated that he discovered the virus of serum hepatitis (viral hepatitis) by means of the electron microscope. This is a step forward.

Military forces throughout the world have had to cope with this disease for hundreds of years. Our most recent experience was during the Korean Conflict, when there were hundreds of cases of hepatitis.

How this disease spreads is not fully known. But one of the ways is through food and serum, hence the names: infectious hepatitis and serum hepatitis. Cleanliness of hands in the preparation of food, careful preparation of all subcutaneous materials and the apparatus used is essential. Someone has said that the washing of hands before meals would materially reduce the incidence of the disease.

The upward trend of viral hepatitis must be curbed. It might be well to get a copy of the U.S. Government booklet No. FS 2.2:H 41 on the subject from the Superintendent of Documents, Government Printing Office in Washington, D.C. The cost is only 55¢ per copy. Once procured, study the booklet and be on the look-out for viral hepatitis.

The Andrew Craigie Award

THE Executive Council of our Association recently approved the establishment of an award which will be known as "The Andrew Craigie Award." This will be given for proficiency in pharmacy in the Federal Medical Services. The award has been made possible through the courtesy of Lederle Laboratories, Division American Cyanamid Company.

The recipient of the award will be selected by the Association's Committee on Awards and must be a graduate registered pharmacist, a commissioned officer of the Army, Navy, or Air Force, or have an equivalent Civil Service rating in the U.S. Public Health Service or Veterans Administration.

Presentation of the first Andrew Craigie Award will be made during the 66th Annual Convention of the Association which will be held at the Mayflower Hotel, Washington, D.C., November 8-11, 1959.

Andrew Craigie was the first Apothecary General of the military forces of our country and served under General George Washington during the Revolutionary War. He was born in Boston, June 7, 1743, and was educated in the Boston Latin School. Nothing more is known of his early life until he was appointed on April 30, 1775, by the Committee of Safety of the Province of Massachusetts to take care of its medical stores. He assisted in caring for the wounded at the Battle of Bunker Hill, June 17, 1775. Records are confusing as to his release from

service but it appears that his service was terminated in November 1783.

Craigie's later life was marked by business success and then marred by an unhappy marriage and business failure. He died September 18, 1819 at the age of 76. There were no descendents.

Cleaning Instruments by Ultrasonics

LABORIOUS procedures that will yield to modern time saving methods should be eliminated in hospitals. We are constantly hearing about work simplification, shortage of trained personnel, yes, even shortage of any class of personnel. Particularly do we hear about these problems around military hospitals—well, in fact any hospital. Did you ever know of any hospital that had enough personnel?

What satisfaction does a nurse or her assistants in an operating pavilion get out of cleaning a stack of soiled instruments by the hand brush and soap and water method. Well, you may philosophize and say there is the satisfaction of getting the instruments perfectly clean. That is one way of looking at the matter. That is the optimist's attitude. But really that method is labor wasted and monotony personified. Yet it *was* the only way of getting instruments clean.

Things have changed now. That cleaning of instruments job which took twenty to thirty minutes can now be done in three minutes. How? By electronics—shall we say —but more specifically by ultrasonics.

We recently saw this labor saving device demonstrated. We are convinced that time is not only saved but the job is better done. We fully believe that such a unit should be in every surgical pavilion. The hand brush, soap and water method is on the way out. Ultrasonic cleaning is the answer.

★

WIND CHILL

TABLE OF EQUIVALENT TEMPERATURES ON EXPOSED FLESH AT VARYING WIND VELOCITY

Temp.—Degrees Fahrenheit	Wind Velocity—Miles per hour										
	45	35	25	20	15	10	5	3	2	1	0
90	89½	89	88½	88	88½	87½	87	86	84½	83	
82	81	80½	80	79½	78	76	74	72½	70	60	
72	71	69½	68	67	65	60	57	53½	47½	23	
63	61	59	57	55	52	44½	39	34½	20	−11	
51	49	47	45	42½	38	28	18½	11	0	−27	
41	39	36	34	30½	25	11	0	− 9	−23½	−38	
30	28	25	23	18	11	− 5	−16½	−40	−40	−40	
20	18	14	11	6	− 2	−19	−40	−40	−40	−40	
10	7½	3	0	− 6	−15	−35	−40	−40	−40	−40	
0	− 2½	− 8	−12	−18	−29	−40	−40	−40	−40	−40	
−11	−14	−18	−23	−30	−40	−40	−40	−40	−40	−40	
−21	−24	−30	−35	−40	−40	−40	−40	−40	−40	−40	
−32	−35	−40	−40	−40	−40	−40	−40	−40	−40	−40	

Instructions for use of table

Locate number at top according to wind velocity.
Follow down that column to temperature.
Follow that line to right to zero column.
Number in zero column gives temperature on exposed flesh.

(This table was developed at the U.S. Army Medical Research Laboratory, Fort Knox, Kentucky)

The Association of Military Surgeons of the United States

Founded 1891, Incorporated by Act of Congress 1903
Suite 718, New Medical Bldg., 1726 Eye Street, N.W., Washington 6, D.C.
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The Sir Henry Wellcome Medal and Prize

COMPETITION FOR 1959

THE competition is open to all medical department officers, former such officers, of the Army, Navy, Air Force, Public Health Service, Veterans Administration, The National Guard and the Reserves of the United States, commissioned officers of foreign military services, and all members of the Association, except that no person shall be eligible for a second award of this medal and prize and no paper previously published will be accepted.

The award for 1959, a medal, a scroll, and a cash prize of $500, will be given for the paper selected by a committee composed of the Association's vice-presidents which reports on the most useful original investigation in the field of military medicine. The widest latitude is given this competition, so that it may be open to all components of the membership of the Association. Appropriate subjects may be found in the theory and practice of medicine, dentistry, veterinary medicine, nursing and sanitation. The material presented may be the result of laboratory work or of field experience. Certain weight will be given to the amount and quality of the original work involved, but relative value to military medicine as a whole will be the determining factor.

Each competitor must furnish six copies of his paper which must not be signed with the true name of the author, but are to be identified by a *nom de plume* or distinctive device. These must be forwarded to the Secretary of the Association of Military Surgeons of the United States, Suite 718, 1726 Eye St. N.W., Washington 6, D.C., so as to arrive at a date not later than 20 June 1959, and must be accompanied by a sealed envelope marked on the outside with the fictitious name or device assumed by the writer and enclosing his true name, title and address. The length of the essays is fixed between a maximum of 10,000 words and a minimum of 3000 words. After the winning paper has been selected the envelope accompanying the winning essay or report will be opened by the Secretary of the Association and the name of the successful contestant announced by him. The winning essay or report becomes the property of the Association, and will be published in MILITARY MEDICINE. Should the Board of Award see fit to designate any paper for "first honorable mention" the Executive Council may award the writer life membership in The Association of Military Surgeons, and his essay will then also become the property of the Association.

Around the World

(Ser. III, No. 5)

By
CLAUDIUS F. MAYER, M.D.

ETHIOPIA's present *medical service* is in the hand of a very small group of doctors. There are only about 150 physicians in this African country, most of them foreigners. They have to deal with the possible sickness of approximately 20 million people. Certain districts of the country have never seen a doctor or a health worker. The Government of Ethiopia repeatedly urged the World Health Organization to undertake an extensive epidemiological survey, and to study the possibility that mobile health units could suitably provide medical service, while traveling from village to village. For the improvement of the situation, the Ethiopian Government opened a *college at Gondar* for the training of *auxiliary health officers.* These are speedily put through an abbreviated course of three years, learning meanwhile how to vaccinate, how to take care of the more common ailments, how to give health advice, and how to watch out for epidemics. This college graduated the first 20 students just about a year ago. Though the health officers are still small in number,—at least 5,000 of them are needed—they do not lack enthusiasm for their work, believing that their country is the *paradise on earth,* and, with improvement of sanitation, it could comfortably feed four to five times as many people as the present native population.

By the way! During the Abyssinian royal family's stay in London in exile in 1936, Princess Tsahai, the youngest daughter of Haile Selassie, became a registered nurse of England. On her return, she started to organize welfare centers, clinics, and hospitals. She died at 23 years of age, and her memory is preserved in the *Princess Tsahai Memorial Hospital.*

Almost all other African countries have similar diffculties in the organization of public health and medical care as Ethiopia has. Let us look, for instance, at Libya. The difficulties of the organization of the *Libyan public health service* were recently discussed by the General Director (W. Föllmer) of the service. The main difficulty is: great distances (often over desert areas), scanty population, lack of adequate health personnel, and language. The Kingdom of Libya is a country of 1,750,000 sq. Km, with a population of only 1.1 million people. Many of the inhabitants are living in small, scattered communities which are not connected with a modern network of roads. The training of female nurses is also difficult because of the local custom of wearing a veil. Moreover, the vocation of a nurse had not been considered decent by the native ranking families. Physicians are few; hence, the major load of the public health service must be placed upon easily trained, "middle cadre" personnel. Such training is aided by the WHO. Construction of medical institutions is partly helped by the *Libyan American Reconstruction Commission.* Modernization of the existing hospitals is, however, more important than the building of new ones (which, in lack of personnel, cannot be staffed anyhow). Hospitals are available in each of the provinces (Tripolitania has 4, Cyrenica has 4, and Fezzan has one). The rural population is cared for in dispensaries which are managed by nursing personnel, and are under the supervision of visiting medical officers. The public health organization of Libya is a sort of compromise among the residues of the former Italian, English, and French administrations of health (remnants of previous occupations). The Italian influence is most prevalent in Tripolitania where 90% of the physicians are Italian. The English influence is felt chiefly in Cyrenaica, while Fezzan

shows the French influence, and its physicians are former pupils of French schools of medicine.

The health organization of the Sahara is also in the hands of French people. This desert area became important when political troubles in the Middle East began to threaten the life-lines of the French for oil. Hence, for several years now, France has been searching for oil in her own overseas territories. A few years ago, oil was found at some parts of the Sahara Desert. Oil-well drilling was especially successful around Hassi Messaud (Algeria) and at two other fields. The oil industry then helped the penetration of *sanitation and medical care into the Sahara.* At the oil fields, the workers are living in a certain isolation from the troubles of the rest of the world. Their camps have air-conditioned buildings. Much of the drilling work is carried out during the night. The workers are partly (60%) French, partly (40%) Moslem natives. The Oil Company feeds them and treats them well. In their tiny restaurant, they have a printed menu, and the meals sometimes consist of five courses. The families of the workers are, however, absent. Security is provided for the camp by frequent air patrols. The workers have good pay, and proper medical attention.

More and more people recognize the strategic importance of Africa, or the charms of this mysterious continent. Modern technology makes it possible now for people to follow the footsteps of Livingstone, or for them to plan long vacations in Guinea, the Ivory Coast, in the French Sudan, or even *in Southwest Africa among the Hottentots.* These people are living in two or three small groups on reservations in the Warmbad district, just north of the Orange River, in the Keetmanshoop district, and in Bethanie. Their territories have no contact with the sea, and are so arid that the annual precipitation is hardly four inches. Under such conditions, agriculture is impossible, and the Hottentots are chiefly living from their sheep and goats. Much of their food comes from the veld, such as various bulbs, melons, honey, and gum acacia. Locusts and locust meal are delicacies. Their "askoeke" is a whole meal bread without yeast, baked in ashes.

A South African doctor, who attended the *Keetmanshoop Native Hospital,* made note of the *diseases prevalent among the Hottentots* among whom he practiced for several years as a district surgeon. The land of the Hottentots does not know malaria, or schistosomosis; neither is there leprosy or amaas. The area is marked by high fluorine content of the water, and therefore fluorosis of the teeth is endemic, but dental caries is almost unknown. Syphilis and gonorrhea are common, but neurological complications of lues are rare (tabes or GP). Among the psychoses, a condition of *hypersuggestibility,* resembling latah, is common. Brucellosis is endemic, and echinococcosis is often found. Relapsing fever is carried by the tampan tick (*Ornithodorus moubata*), but the disease does not show any unusual features clinically. Tuberculosis is comparatively rare; amebic dysentery is absent, and intestinal worms (Taenia, Ascaris) are rare.

The Hottentot men do not practice circumcision. Since their prepuce is long and of the infantile type and since they are not very clean (the water is scarce), they frequently develop an *epithelioma of the penis.* In Hottentot women, the commonest form of cancer is an *epithelioma of the mouth.* Many of the older women smoke a "pipe" made from tin, or galvanized iron, or brass. After a few puffs the mouth end of the pipe becomes hot, but the women do not care. Several hundred of them showed leukoplakias of the mouth at casual examinations. The men smoke pipes with ebonite stems, and they do not have mouth cancers. Among the skin diseases, the most common were a form of epidermolysis bullosa on the hands, and an encrusted form of scabies. It may come from contact with mangy jackal karosses on which the Hottentots often sleep at night.

In a louse-borne *typhus fever epidemic* which broke out among these people, the interesting feature was that the lice were found not only on the clothes but also in the sack cloth which forms the external walls of

the Hottentot hut. For the control of the epidemic the hut had to be destroyed also. *Onyalai* is a peculiar hemorrhagic disease, sometimes occurring among the natives. There are hemorrhagic blisters in the mouth, purpuric rash on the skin, hemorrhages from mucous membranes, kidney, and bowels. The condition always cleared up rapidly with autohemotherapy. It is doubtful that the cause of onyalai is a poisonous herb or defective nutrition. Could it be due to the same virus (or a geographically modified strain of it) that causes epidemic hemorrhagic fever in the Far East, in Russia and in some countries of Europe? Nobody made a comparative investigation until now.

The Ministry of Health of *Nyasaland*, one of the African countries where trouble is now brewing, has established a *new leprosy settlement* and hospital as a first step in the combat against leprosy in the Africans of this country. It was erected at Kochira, a few miles away from Fort Manning. In addition to the hospital, there will be 120 houses (103 are now completed). Each house is for the accommodation of four lepers.

From another turbulent African country, from the Belgian Congo and *Ruanda-Urundi*, we learned about the wholesale polio *vaccination* of the non-immune inhabitants. The Chat strain of Type I Poliovirus has been used for the preparation of an attenuated *live poliovirus* which was administered by oral vaccination. The experimental immunizations were made after various tests on monkeys and on man showed the safe nature of this vaccine of live poliovirus. A total of 244,596 persons, male and female of all ages, were immunized. After the vaccinations, no new case of paralytic poliomyelitis occurred in this territory.

Around the southeastern elbow of the Mediterranean, the land is mainly desert such as the *Suez Canal Zone*, the Sinai, the Negev and Aqaba. The fauna of these areas includes also snakes, the majority of which are poisonous, such as the sand vipers and the Egyptian cobra. The horned viper (*Cerastes cerastes*) is a foot and a half in length, of light sandy yellowish gray, with dark brown spots on its back, and a dark stripe behind the eye. It is found around the Dead Sea and the gulf of Aqaba. The common sand viper of North Africa is the hornless *Cerastes vipera;* it is also found in Egypt. The *Echis colorata* is a small but very poisonous snake around the Red Sea, and Southern Arabia. It buries itself in the sand, and thus may be easily kicked. The *Atractaspis* was recently described in the Sinai and Negev. Among the elapid snakes the most important is the Egyptian cobra (*Naja haje*), 6½ft. in length, which forms a hood by widening its neck.

The venoms of the two snake families differ in action. The vipers cause much local reaction, and act chiefly upon the vascular system. The cobra causes little local reaction, but acts rapidly on the nerves, producing paralysis within half an hour after the bite, together with profound shock (systolic pressure down to 70 mm Hg). At present, the Institut Pasteur produces four polyvalent *antisera against snake venoms.* The AN brand (Afrique Nord) is the one which contains specific antitoxins against the venoms of Cerastes and Naja (10 ml. subcutaneously near the site of the bite, repeated if necessary).

Africa is also a threat to the world according to a few alarmists who try to forecast the future *population of the globe.* Looking upon the growing rate of mankind, one of them remarked that it took the human race 200,000 years to reach its present size of two and a half billion individuals, but it will take only 30 more years to add another two billion. If the increase of reproduction goes on at its present rate, in 600 years there will be so many people living on Earth that only one single square meter would be available for each of them to live on. And a demographic report of the United Nations tells us that mankind would keep on growing until the population of Terra would reach 25,000 million. Much of this fantastic population would grow in Latin America, and *Africa,* and Asia, while the relative importance of Europe including the Soviet Union would have a continuous decline.

As a result of the *Cuban revolution,* Julio Martínez Paez became the *new Health Minister* of the small island of Pennsylvania's size. This is not remarkable, except for the fact that this man is a physician, and he was the head of the rebel hospital in the Sierra Maestra. (Let us also recall one ugly episode of the revolution so near to our country. In a last frantic effort, a group of three of dictator Batista's diehards disguised themselves as women and seized a Red Cross ambulance for a mad dash through Havana's streets, spraying shots at the Fidelists).

In June 1956, a Ministerial Order "liberated" all women of Hungary from their moral obligations and declared that they may do with their pregnancies as they see fit. In other words, anyone could have an abortion, without any previous examination, or without any legal restrictions. The *liberation of abortions* resulted in an unprecedented increase in abortions *among Hungarian women.* In 1955, the statistical figures revealed only 35,400 cases, while in 1956 this figure grew to 80,000, and in 1957 to 120,000. Though the Hungarian Government tries to minimize the terrible practice by justifying it with an allegedly too rapid increase in the population, lack of kindergartens and school rooms, and lack of proper dwellings, etc. etc., at the same time the Government also tries to eliminate the evil of abortion by encouraging the instruction and information about birth-control, organizing a network of birth control posts, and increasing the manufacture and distribution of contraceptives.

Recent reports from Red China indicate that the new government tries to promote the works and activities of the *Red Cross.* Health posts are established in many factories, and they are also providing the first-aid for the boat dwellers at various parts of China. In a Shanghai textile works, the medical service increased so much that a 60-bed sanatorium is now available, with a staff of 5 physicians and 18 nurses. Service is also provided to the families of the workers, and this service is allocated on a regional basis. Of course, this is but an imitation of the Soviet pattern. Members of the employee staff received instruction in first-aid by the local Red Cross Society, and thereafter they were organized into health posts within the workshops of the factory. Campaigns of "health weeks" teach the workers about the benefits of non-spitting, and about the various occupational diseases. The health posts which were established among the 60,000 boat dwellers in Canton are chiefly for life saving, especially during typhoons, floods, and other natural calamities.

The year of 1958 was the first one of the *second Five-Year Plan for Red China.* At the beginning of this new period, the medical workers of China were reminded of the four cardinal principles of the public health policy of China: (1) serving the workers, peasants and soldiers; (2) emphasis on prevention; (3) cooperation between physicians of western and traditional medicine, and (4) health work through mass campaigns and active participation of the medical workers in such campaign.

As a proof of the intensive mass campaigns, the editors of a Chinese medical journal remark that from December 1957 to the end of May 1958 the total *number of pests destroyed* was: rats 1,204,000, sparrows 1,206,000,000, flies 61,682,000 kilograms, and mosquitoes 6,285,600 Kg. How these counts were made is not exactly known. But the number of rats must be tremendous in China. Just imagine that *in Peiping along* the sewage system includes several hundred kilometers. Recently, 20,000 workers were engaged there to lower iron containers with burning sulfur through 6,000 manholes in the hope to smoke the rats to death.

The *first intracardiac operation* under direct vision with the aid of an "extracorporeal circulation machine" was performed in China at the Fourth Military Medical College Hospital on June 25, 1958. The patient was a 6-year old boy with congenital interauricular septal defects.

Last May, a Shanghai steel worker, called Chiu Tsai-Kang, was severly burned, but, due to good treatment in the Kuangtzu Hospital, his life was saved. Some people called it a miracle, while the *National Field Con-*

ference, held last November on the prevention and treatment of burns, saw in it a proof that *"medical and health work must be led by the Party",* and that *". . . miracles happen wherever politics is in command* of the situation, the masses are mobilized, and the collective wisdom is developed." The Conference also expressed the unanimous opinion that Chinese herb practitioners and herbs have their advantages over medical doctors and Western medicines in the treatment of burns.

All Russian medical journals and magazines are at present full of remarks to, analysis of, and talk about the statements in the *report of Khrushchev* on *"Control Figures of Development of the Nationl Economy of the U.S.S.R. for the years 1959-1965."* This general economic plan provides almost 26 billion rubles for the promotion of public health, physical culture, and sport and medical industry. The official propaganda, which permeates even the scientific journals of the Soviet, leads us to believe that the Russian government will take special care of the *medical needs* of its subjects by increasing its activity of *building clinics* and other medical establishments, of widening the facilities for recovery of health at the sanatoria in the many resorts scattered all over the country, including the Crimean Peninsula.

Freudism and psychoanalysis is still not liked by the official Soviet medicine. Recently, a certain Russian professor (D. Fedotov) headlined his article on this subject *"Freudism—reactionary manifestation of the bourgeois ideology."* Freudism is something for him which should fit the mentality of a capitalistic State. Indeed, he says, the center of present day psychoanalysis is the United States of America, "which, as well known, is already also the center of World Imperialism." The trouble with Freudism, and/or with psychoanalysis is that it is not contented with being a branch of medicine and psychology, he continues, but its ideas invade the sphere of philosophy, biology, and sociology. When it does so, it comes into conflict not only with Pavlovism (which the Russians favor for the explanation of psychoneuroses) but also with Leninism, Marxism, etc., and with the sacrosanct dialect materialism. Freudism is in the service of "historical idealism," and a philosphy of "imperialism, militarism, and obscurantism." . . . *Multa paucis!*

NOTES

Timely items of general interest are accepted for these columns. Deadline is 3rd of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON. FRANK B. BERRY, M.D.
Deputy Ass't Sec'y—HON. EDW. H. CUSHING, M.D.

ARMED FORCES DAY

May 16 has been set aside as Armed Forces Day. While that day will be especially emphasized the entire week of May 9-17 will be observed by all Army, Navy, Air Force, Marine Corps, Coast Guard and Reserve Forces. Installations will have special displays for the public. The 1959 observance will emphasize the role of our Armed Forces in the Free World POWER FOR PEACE.

ARMED FORCES

The numerical strength of the Armed Forces on November 30, 1958 was 2,589,200. The figure was given on preliminary reports.

HR 1952

Mr. Rivers (D-SC) has introduced a bill in the House of Representatives (HR 1952) which will provide for an increase in the rank of certain officers of the Army, Navy, and Air Force. "That hereafter the chief of each of the several bureaus in the Department of the Navy, the Judge Advocate General of the Navy, and officers serving in comparable offices in the Department of the Army and in the Department of the Air Force shall, unless otherwise entitled to the same or higher rank, have the rank of vice admiral or lieutenant general, as appropriate, while so serving."

Enactment of this legislation would provide increased rank for the Surgeons General of the three services.

MEDICARE

As previously predicted the Medicare Program will need additional funds. At the beginning of this fiscal year the program had a large deficit. Congress appropriated insufficient funds for this fiscal year so now the program is behind the proverbial eight-ball.

It is estimated that the Medicare Program cost approximately $90 million a year, and *for this year* the deficit will be about $20 million, since Congress appropriated $72 million which was not sufficient.

RETIREMENT AGE

For income tax purposes retirement age has been set forth in a recent bulletin of the Internal Revenue Service. Officers retired for physical disability will do well to check Revenue Ruling 59-26, Internal Revenue Bulletin No. 4, January 26, 1959.

Tax deductions may be made up to $100 a week for officers retired for physical disability.

SMALLPOX

The recent occurrence of cases of smallpox in Germany points up the need for keeping current the smallpox vaccination of each individual. Here is a disease that can be controlled by a simple method. Almost absence of the disease in the United States and some other countries has led to laxity in the matter of vaccination against smallpox. The best

method seems to be vaccination every three years.

LETTER OF APPRECIATION

Doctor Fathollah K. Mostofi, scientific director of the American Registry, Armed Forces Institute of Pathology, Washington, D.C., has been awarded a Letter of Appreciation from the Secretary of Defense for outstanding performance of his duties while serving as the secretary of the Joint Committee on Aviation Pathology.

This committee is concerned with the program for the medical study of military aircraft accidents.

Army

Surgeon General—MAJ. GEN. SILAS B. HAYES

Deputy Surg. Gen.—MAJ. GEN. JAMES P. COONEY

SIMMONS MEMORIAL LECTURE

Nutrition in National Defense and in World Peace was the subject of Dr. John B. Youmans paper which was presented for the fifth annual James Stevens Simmons Memorial Lecture at the Walter Reed Army Medical Center, January 15. The lecturer is Technical Director of Research, U. S. Army Medical Research and Development Command, Office of the Surgeon General of the Army.

Dr. Youmans said, "It is to the credit of General Simmons that he recognized the importance of nutrition in preventive medicine (and indeed in curative medicine), in military medicine, and fostered, supported, and developed this discipline in a way which made it an important phase of medical practice, both military and civilian."

Also, "With the conquest of infections, undernutrition or malnutrition becomes perhaps the largest health problem of the world today." And, "As food and nutrition have been a tool of war so can they be a tool for peace."

Dr. Youmans stated that, "Surveys have been conducted in eight foreign countries. In all eight, the military population has been found to be in reasonably good nutritional health in respect to body weight and physical condition. In all eight countries the only nutritional deficiency diseases, all of borderline to mild degree and slight to moderate frequency, were deficiency of Vitamins A, C, and Riboflavin. In those countries with separate police forces, their nutritional state was somewhat poorer than among the military. In all countries in which comparisons were made, the noncommissioned officers and officers had a nutritional status slightly better than among privates. In all countries the nutritional state of recruits was found somewhat in favor to that of soldiers with longer service.

Furthermore he remarked, "In all countries there was an intense and sincere interest in nutrition and its problems and a desire to improve it, to study it, and to educate the public in regard to it.

"As might be expected, the recommendations are also very similar in all eight countries. In general, they have been as follows. "The addition of green and yellow vegetable to rations and diets to add Vitamin A and C. The addition of protein, including somewhat more animal protein for riboflavin.

"The development of satisfactory field rations to be correlated with improvement in food technology.

"The organization of a full time nutrition service, military, civilian, or both, properly related and conducted. Such a service to study nutritional status, conduct surveys, develop proper nutrition practices etc., educate nutrition personnel of all levels and the public, and conduct research. Improve kitchen equipment and practices and sanitation.

"Measures to increase production, improve processing, storage, and transport. The development of indigenous foods in a wide variety. In a few instances, the use of enriched basic foods."

ASSIGNMENT IN SGO

Lt. Colonel Wilson E. White, MSC, has been appointed Assistant Chief of the Pro-

gram Coordination Section in the Office of the Surgeon General of the Army.

He is a graduate of the Command and General Staff School, the Officer Advanced Course, Army Medical Service School, and the Officer Advanced Course, Infantry School.

Colonel White served in Europe in World War II and twice in Korea. He has received the Bronze Star Medal with oak leaf cluster and the Combat Infantryman's Badge.

APPOINTMENT

Dr. Alfred S. Evans, formerly chief of the U. S. Army Hepatitis Center and Research Laboratory in Munich, Germany, and a member of the staff of the 44th General Hospital (Army Reserve) has been appointed director of the State Laboratory of Hygiene, University of Wisconsin, effective September 1, 1959.

An associate professor of medicine at the University of Wisconsin Dr. Evans has since 1952 been engaged in work in the fields of preventive medicine and medical microbiology. He will succeed Dr. William D. Stovall who has been director of the laboratory for 44 years.

From 1944 to 1946, Dr. Evans served in the Army in Kentucky and as a military government public health officer in Japan. He then spent four years in research and returned to the military service in 1950.

NEW ASSIGNMENT

Colonel Thomas E. Patton, Jr., until recently Chief of the Medical Intelligence Division in the Office of the Surgeon General of the Army, has been assigned as Commanding Officer, U. S. Army Hospital and Post Surgeon at Fort Lawton, Washington.

Colonel Patton, a native of Texas, served in the Preventive Medicine Division of the Surgeon General on a previous tour. He is a graduate of the St. Louis University School of Medicine and 1946 received his Master of Public Health degree from Johns Hopkins University. During World War II he served in Africa, the Middle East and in England.

CHIEF, MEDICAL SERVICE

Colonel Robert E. Blount, MC, recently returned from Germany where he was Medical Consultant to USAEUR and has taken up his duties as Chief, Medical Department, Brooke Army Hospital, Fort Sam Houston, Texas.

CHIEF NURSE

Lt. Colonel Francis C. Gunn, ANC, has been appointed Chief Nurse, Second Army, Fort Meade, Maryland.

BOVARD AWARD

Major Ruth Edenfield, ANC, was awarded the 1958 Evangeline G. Bovard Award at Letterman Army Hospital where she is Head Nurse, Medical Nursing Service, for outstanding achievement in the field of nursing.

The award was established by Colonel Robert Skelton, USA, Retired, in memory of his wife, a former Army Nurse. The 1958 award is the second one to be presented and was made to Major Edenfield by Colonel

Army Photo

MAJ. RUTH EDENFIELD, ANC

Skinner in appropriate ceremonies at the hospital recently.

Major Edenfield, a native of Georgia, received a degree in education and taught four years in South Carolina before pursuing her studies in preparation for a nursing career. She is a graduate of the Nursing School at Grady Hospital in Atlanta where she remained on duty for four years. In 1943 she came on active military duty and was with the 67th Evacuation Hospital in Europe for two years winning five battle stars for campaigns in the European Theater. She went back to school after World War II and received an M.A. degree in psychology. She reentered the military service during the Korean Conflict and has been on active duty since.

CHIEF OF SURGERY

Colonel John M. Salyer, MC, has been appointed Chief, Department of Surgery, Fitzsimons Army Hospital, Denver, Colorado. He has succeeded Brig. General Clinton S. Lyter, who has taken command of William Beaumont Army Hospital, El Paso, Texas.

A native of Kentucky, Colonel Salyer received his B.A. degree from the University of Kentucky and his M.D. degree from Vanderbilt University. He entered active military service in 1939. During World War II he served in the China-Burma-India Theatre as Executive Officer of the 73rd Evacuation Hospital and later became commander of the unit.

In 1957 Colonel Salyer went to the University of Minnesota where he learned the techniques of the heart machine and soon after directed the use of one at Fitzsimons. He has been a leader in the development of cardiac surgery at that Army hospital.

GREEN UNIFORM

Wearing of the green uniform for commissioned officers and warrant officers is now authorized for off-duty hours except on formal social occasions when the proper uniform is the blue dress.

Civilian clothes may be worn off post as has been the custom.

DEPARTMENT OF ARMY SECRETARIAT

Several changes have been made in the organization of the Department of the Army Secretariat as a part of the over-all Department of Defense reorganization program, Secretary of the Army Wilber M. Brucker announced this week.

Assistant Secretary of the Army Dewey Short has been assigned to the position of Assistant Secretary of Army (Manpower, Personnel and Reserve Forces), effective December 31, 1958. This position has been vacant since the appointment of Hugh M. Milton II as Under Secretary of the Army on August 25, 1958. Mr. Short formerly held the position of Assistant Secretary of the Army (Civil-Military Affairs), which has been abolished.

The functions of the office of the Assistant Secretary of Army (MP&RF) and the office of the Assistant Secretary of Army (CMA) are being consolidated. Within the office of the Assistant Secretary of the Army (MP&RF), Franklin L. Orth has been redesignated as Deputy Assistant Secretary of the Army for Manpower and Reserve Forces, and Edward A. Bacon has been redesignated as Deputy Assistant Secretary for Civil Affairs.

BIRTH IN FLIGHT

The SACom SCENE reports ANOTHER ARMY FIRST—an Army H-34 helicopter lost a race with the stork January 11, and became the first of its kind to serve as an aerial delivery room.

The "air-born" son of Sergeant and Mrs. William S. Nolan, 2nd Armored Cavalry Regiment, Bindlach, arrived at 1555 hours when the 504th Avn Company's chopper was five minutes away from the landing pad at the U. S. Army Hospital, Nuremberg, Germany.

Mother and baby were reported doing well by the doctor who accompanied them in the aircraft.

"I can't figure out how to log the baby on the flight plan," the pilot said. "Nothing in regulations covers the acquisition of an additional passenger in flight."

Navy

Surgeon General—REAR ADM. BARTHOLOMEW W. HOGAN

Deputy Surgeon General—REAR ADM. BRUCE E. BRADLEY

SURGEON GENERAL'S TERM EXTENDED

Rear Admiral Bartholomew W. Hogan's term of office as Surgeon General of the Navy has been extended for two years, until Feb. 15, 1961. This will permit him to round out 35 years in the Navy.

ASSIGNMENTS TO BUMED

Captain John E. Nardini, MC, who had been on duty at the U. S. Naval Hospital at the National Naval Medical Center, has reported for duty in the Bureau of Medicine and Surgery as Head, Neuropsychiatry Branch.

Captain George C. Rader, DC, who has been on duty at the Naval Dental Clinic, Naval Gun Factory, Washington, D.C., has been assigned to the Bureau of Medicine and Surgery for duty as Assistant Head, Planning and Analysis Branch, Dental Division.

Lieutenant Urban J. Bender, MSC, has been assigned for duty as Head, Career Planning Branch; Head, Personnel Accounting Branch, and Head, Medical Service Corps Training Section, of the Medical Service Corps Division.

PROMOTED

Rear Admiral Wendell G. Scott, MC, USNR, Commanding Officer of Medical Reserve Company 9-1, St. Louis, Mo., was promoted to his present rank on January 16, 1959. His certificate of promotion was given him by Rear Admiral Walter F. James, MC, USN, District Medical Officer, Ninth Naval District, during a dinner meeting held in St. Louis.

Rear Admiral Scott served on active duty from 1941-1946. While on duty at the U. S. Naval Hospital, Seattle, Washington, in 1943, he was cited by the Surgeon General of the Navy for his work in the field of rehabilitation and for the development of the plywood splint which proved to be so helpful to the Marines.

HONORED

Captain Charles F. Gell, MC, was presented the Melbourne W. Boynton Award for Space Medicine at the Honor's Night Dinner of the American Astronautical Society's Annual Meeting held in Washington, December 27, 1958. Presentation was made by Rear Admiral Edward C. Kenney, Assisant Chief of the Bureau of Medicine and Surgery for Personnel and Professional Operations.

The Melbourne W. Boynton Award for Space Medicine is given annually for outstanding contribution to astronautics through medical research.

RETIRED

Medical Corps officers of the Navy who have recently been retired are: Captains Ferdinand V. Berley, Garland A. Gray, Matthew J. Hantover, Lyle A. Newton, and Harold L. Weaver.

Medical Service Corps officers of the Navy recently retired are: Commander Leo M. Lay, Lieutenant Commanders Leon A. Gautheir, and Lieutenants Harwin M. Hosler and Paul E. Musick.

Dental Corps officers retired recently are: Captains Harold Aillaud, Mack Meradith, Otto H. Schlicht, and Commander Kersam K. Krouzian.

"NUCLEAR NURSE" CLASS GRADUATES

Recently the first group of "nuclear nurses" graduated from an extensive course in nuclear nursing which was offered at the National Naval Medical Center, Bethesda, Md. This is the first such course offered in this country.

The nurses will be assigned to hospitals in clinical radioisotope laboratories metabolic research units and other allied areas.

RECEIVES LEGION OF MERIT

Lt. Charles L. Novosad, Jr., MC, USNR (inactive) has been awarded the Legion of Merit.

The citation reads: "For exceptionally meritorious conduct in the performance of outstanding services to the Government of the United States as Base Medical Officer and Flight Surgeon, attached to the Mobile Contruction Battalion (Special), on board the United States Naval Air Facility, McMurdo Sound, Antarctica, from 21 Januray to 16 November 1957. Exercising sound judgment, keen foresight, and unusual professional ability, Lieutenant Novosad was highly successful in carrying out his responsibilities throughout this period. On 12 July 1957 when a helicopter crashed and burned on the ice near the base, resulting in the instantaneous death of one man and critical injuries to two others, Lieutenant Novosad was directly responsible for saving the lives of the two seriously injured men, rendering immediate diligent, and constant care until they were evacuated on 3 October 1957. By his outstanding and inspiring devotion to duty in the face of extremely difficult circumstances, he upheld the highest traditions of the United States Naval Service."

His present address is Headlee Clinic, Odessa, Texas.

NEW ENDODONTICS TRAINING FILMS

The premier showing of "Endodontics," a group of three training films produced by the staff of the U. S. Naval Dental School and the Audio-Visual Division of the U. S. Naval Medical School, was held recently at the National Naval Medical Center.

The films (MN-8566ABC, Endodontics, (A) Diagnosis and Case Selection, (B) Biomechanical Preparation of the Root Canal, (C) Filling the Root Canal, will be available under general distribution through District Film Libraries next summer.

PROMOTION POINT CREDIT

Reserve Medical officers not on active duty may receive promotion point credit for completion of approved residency training.

One promotion point for each semester hour or equivalent thereof may be credited not to exceed 12 per fiscal year. To be creditable residency training must have been completed in present grade since July 1, 1950. For residencies completed prior to July 1, 1957, promotion points are creditable as of July 1, 1957. Residency training completed in subsequent fiscal years may be creditable on a yearly basis as of 30 June of the fiscal year that each year's training is completed.

Requests for promotion point credit must be submitted by the individual reserve officer to the Officer in Charge, Reserve Officer Recording Activity, Omaha, Nebraska, forwarded via the Chief, Bureau of Medicine and Surgery.

Each request must be accompanied by a certification from the institution or activity where the training was taken showing the type and inclusive periods in which enrolled. Credit can only be given for training completed in increments of 12 months and cannot be credited in advance of any given date.

The Chief, Bureau of Medicine and Surgery will evaluate the training received and by endorsement certify the number of promotion points and forward individual requests to RORA for appropriate administrative action.

Air Force

Surgeon General—MAJ. GEN. OLIVER K. NIESS

Deputy Surg. Gen.—MAJ. GEN. OLIN F. MCILNAY

GENERAL OGLE MOVES

Major General Dan C. Ogle, recently retired Surgeon General of the Air Force, has moved to Peoria, Illinois, where he will take up duties as President of the Institute of Physical Medicine and Rehabilitation.

DEPUTY CHIEF NURSE

Lt. Colonel Dorothy N. Zeller has been named Deputy Chief of the Air Force Nurse Corps. She replaces Lt. Colonel Ethel R. Kovach who will take additional training in nursing education at Catholic University in Washington, D.C.

She is a graduate of the Philadelphia General Hospital School of Nursing and received

her B.S. degree in Nursing Education from the University of Maryland in 1952. Among other assignments, she has served in Germany and Alaska. In the latter area she was Chief Nurse of the Alaskan Air Command.

Air Force Photo

LT. COL. DOROTHY N. ZELLER, USAF (NC)

RECEIVES AWARD

Dr. Hubertus Strughold, world famous Advisor for Research and Professor of Space Medicine at the Air Force School of Aviation Medicine has been named the 1958 winner of the Dr. John J. Jeffries Award for his outstanding contributions in space and aviation medicine research. The award is presented annually to the individual responsible for outstanding contributions to the advancement of aeronautics through medical research. It is awarded by the Institute of Aeronautical Sciences. Major General Otis O. Benson, Jr., Commandant of the School is a previous winner of the award.

Dr. Strughold, often called "the father of Space Medicine," has for the past ten years studied the problem seriously. Because of his work the Department of Space Medicine at the School of Aviation Medicine was established when Major General Harry G. Armstrong was Surgeon General of the Air Force.

Doctor Strughold has received many other honors: the Herman Oberth Medal of the German Rocket Society, the U. S. Air Force Exceptional Civilian Service Medal, the Dr. Theodore C. Lyster Award of the Aero-Medical Association and has held many positions of distinction.

VETERINARY CONSULTANT

The Surgeon General of the Air Force has announced the appointment of Dr. Clarence E. Dee of Hollywood, Fla., as National Consultant in Veterinary Medicine for the Air Force Medical Service. In this capacity he will serve as advisor to the Surgeon General in matters pertaining to the Air Force Veterinary Service.

During World War II, Dr. Dee served as captain in the Army.

ADMITTED TO BAR OF SUPREME COURT

Colonel Donald F. Westra, USAF (MSC), Executive Officer for the Surgeon General of the Air Force, has recently been

Air Force Photo

COL. DONALD F. WESTRA, USAF (MSC)

admitted to the bar of the U.S. Supreme Court.

His story is one of accomplishment. He began his education by taking night classes at the University of Maryland in 1947, and continued doing so until 1954 during which time he earned his B.S. degree and his LL.B. degree. Only in the final semester of law did he have full time to devote to his law studies and this was made possible by the Air Force.

Colonel Westra entered the military service in 1941 and during World War II served in the Pacific Theatre. He graduated from the Command and General Staff School in 1947.

He is a member of the Texas Bar Association, the District of Columbia Bar Association and the American Bar Association.

HONORED

Major V. Harry Adrounie, USAF (MSC) was recently elected a Fellow of the Royal Society of Health, London, England. Major Adrounie is presently assigned as Executive Officer for the Preventive Medicine Division, Office of the Surgeon General.

A PROCLAMATION

Children's Dental Health Week was proclaimed at Ramey Air Force Base for the period of February 8-14. Doctors Lloyd S. Smith, Chief of the Dental Clinic and Francis J. Samaha, periodontist at the clinic were responsible for initiating this important step.

The proclamation by the Commanding General reads:

"WHEREAS, The health, appearance and well being of our children and youth are greatly affected by the condition of the teeth and mouth; and

"WHEREAS, More than 95 percent of our population suffers from tooth decay or other dental disease at some time in their lives; and

"WHEREAS, Early preventive measures can protect our children from a large part of these dental diseases, especially tooth decay, and can help insure good dental health in adulthood; and

"WHEREAS, 1959 is the Centennial Year of the American Dental Association:

Now, therefore, I, W. K. Martin, Major General, United States Air Force, Commander 72 Bombardment Wing, Ramey AFB, Puerto Rico, do hereby proclaim the week of 8 through 14 February, as Children's Dental Health Week at Ramey Air Force Base."

Air Force Photo

Proclamation being signed by MAJ. GEN. W. K. MARTIN, USAF (center); (left) LT. COL. LLOYD SMITH, USAF (DC), Chief of Dental Clinic; (right) MAJOR FRANCIS J. SAMAHA, Periodontist at Dental Clinic.

RECEIVE SAFETY AWARD

The 1st Aeromedical Transport Group at Brooks Air Force Base, Texas, recently received the USAF Flying Safety Award Plaque. The plaque was presented to the unit which is commanded by Colonel L. B. Matthews by Major General R. L. Waldron, Commander of the Western Transport Air Force, MATS.

The enviable record of 19,000 accident free hours was established in spite of many emergency flights into small civil airfields during all types of weather.

COMMAND AND GENERAL STAFF SCHOOL GRADUATE

Major E. Lynne Christy, is the first Air Force nurse to graduate from the Command

and Staff School correspondence course. She is currently assigned to the Office of the Surgeon General, as Air Force Nurse Corps Procurement Officer.

Shortly after entering on active duty in 1942 she was sent to England with the

Air Force Photo

MAJOR E. LYNNE CHRISTY, USAF (NC)

Eighth Air Force and during three years of duty in that area served in France, Belgium, Holland, Scotland, and Wales.

Major Christy has a private pilot's license and has logged more than 200 hours.

NEW HOSPITAL

The new U. S. Air Force Hospital at Larson Air Force Base, Washington, was dedicated on December 13, 1958.

This 50-bed, air-conditioned hospital has an audio visual nurse call system, centralized oxygen and vacuum system, public address and program distribution system, and a centralized food service system.

Specialty services include pediatrics, obstetrics and gynecology, general surgery, and internal medicine.

Lt. Colonel John R. Troxall, USAF (MC) is Commander of the hospital.

NEW COURSES

A new course, "Military Aspects of Sanitary and Industrial Hygiene," has been developed to meet Air Force requirements for Sanitary and Industrial Hygiene Engineers.

The four-week course will be conducted at the Gunter Branch of the USAF School of Aviation Medicine, Gunter Air Force Base, Alabama. Two classes will be held each year, the first in September 1959 and the second in February 1960. It is planned that each Sanitary and Industrial Hygiene Engineer officer coming on active duty will attend this course prior to assignment.

Advanced courses for medical airmen at Gunter Branch of the USAF School of Aviation Medicine will include lectures and exercises on medical effects of ionizing radiation, decontamination and related subjects such as blast and heat effects.

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—JOHN D. PORTERFIELD, M.D.

NEW DRUG

NIH 7519, derived from coal tar, is said to be many times more powerful than morphine. This new drug has been developed at the National Institutes of Health, Bethesda, Maryland, by Dr. Everette L. May, of the Laboratory of Chemistry, National Institute of Arthritis and Metabolic Diseases in collaboration with Dr. Nathan B. Eddy, chief of the Institute's Section on Analgesics.

This drug has been patented. Clinical studies have not yet been completed but if they continue to be as enthusiastic as reports thus far the rights to manufacture the drug under the patents will be extended to pharmaceutical companies.

The Government will explore the possibili-

ties of assigning foreign rights in NIH 7519 to the World Health Organizations so that other nations may profit by the discovery.

HEPATITIS

There was an increase in hepatitis cases in 1958 over the number reported for 1957. In 1957 there were 14,815 cases, and in 1958 there were 15,632 cases.

RETIRED

The following Commissioned Officers of the Public Health Service have been retired: Medical Directors Eddie M. Gordon, Jr., and Ralph Gregg; and Senior Dental Surgeon William C. Parker.

MITOMYCIN C

The Cancer Chemotherapy National Service Center has reported that Mitomycin C, an antibiotic reported as giving promising results in cancer treatment in Japan, has frequently produced major toxic reactions but seldom objective improvement in clinical trials in the United States.

This antibiotic has been under pilot clinical evaluation in this country as an anti-tumor agent in a substantial variety of tumors.

HEMADSORPTION VIRUS INFECTIONS

A study conducted jointly by scientists of the Children's Hospital of the District of Columbia and the National Institute of Allergy and Infectious Disease, shows that the newly recognized hemadsorption viruses were responsible for 50 percent more respiratory infection in children than was Asian influenza during 1957-1958.

The particular study referred to is reported in the JAMA of February 7.

Q FEVER STUDY

The Rocky Mountain Laboatory at Hamilton, Montana, has been designated as the focal point for receiving and evaluating reports in a nation-wide survey to determine the prevalance of Q fever infections in livestock and humans.

The laboratory will assist state health departments and agricultural agencies in performing tests of human, sheep, and bovine serums and milk samples.

ULTRASCOPE

The National Cancer Institute, Bethesda, Maryland, received the first working model of the "Ultrascope" which is a new electron tube that allows direct visual focusing of an image under ultraviolet light. In doing this the tube would replace the regular eyepiece of a microscope.

With this new device it is anticipated that the study of cells will be advanced.

AIR POLLUTION CONFERENCE

"Highlights" of the National Conference on Air Pollution-1958 (PHS Publ. No. 648), a 42-page booklet is available from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., for 35¢ per copy.

The Conference Proceedings will be available about March 1 from the same office.

NURSE TRAINING PROGRAM

A Bill (S.731) introduced in the U. S. Senate by Senator Lister Hill of Alabama would extend the Public Health Nurse Training Program for a period of five years.

HEALTH STATISTICS

Selected Survey Topics-U.S.—July 1957-1958 (PHS Publ. No. 584-B5) is available from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. for 40¢ a copy.

This booklet gives statistics relating to days of disability, acute conditions, chronic conditions, persons injured, physician visits, and dental visits. The figures are based on household interviews during the period mentioned.

Illness or injury caused the American people to stay home from work, stay in bed, or otherwise cut down on normal activities for about 3 billion 400 million days during the year ending June 30, 1958. Disability averaged 20 days per person per year.

It is interesting to note that industry is very much concerned with this loss, estimated at one billion dollars (*Factory Management*), and is holding a meeting at the Palmer House in Chicago March 17-19 to consider means of combating the problem. The meeting will be sponsored by the more than 60 member agencies of the National Health Council.

HOSPITALIZATION

Hospitalization—Patients Discharged from Short-Stay Hospitals, July 1957-June 1958 is a new report (PHS Publ. No. 584-B7), available from the Superintendent of Documents, Government Printing Office for 30¢ per copy.

The report disclosed that more than 16,738,000 people spent varying periods in short-stay hospitals for a total of over 143,322,000 hospital days during the period studied. The average length of stay was 8.6 days.

Veterans Administration

Chief Medical Director—WILLIAM S. MIDDLETON, M.D.

Deputy Chief Med. Dir.—R. A. WOLFORD, M.D.

VETERANS POPULATION

Veterans in civil life at the end of December 1958 totaled 22,717,000 (preliminary report). This is 3,000 less than the figure given for November. There was an appreciable difference among the World War I veterans—2,828,000 for December and 2,836,000 for November. The number from the Korean Conflict had increased while the number from World War II had decreased slightly.

REHABILITATION

Three new steps to help disabled veterans make a smoother and quicker comeback to productive employment have been announced by the Veterans Administration.

One step gives disabled veterans a "head start" toward rehabilitation by allowing them to begin vocational training under VA's program for the disabled while they still are patients in VA hospitals.

But they must be well enough along in their hospital treatment to be able to leave the hospital part of the day to attend school or a training establishment.

Another new step now allows veterans to start vocational rehabilitation training even if they can't complete it by the termination date for training established by the law.

However, arrangements must be made for some agency other than the VA—such as a State Rehabilitation Agency—to pick up where VA has to leave off.

The termination date for disabled Korea veterans who left the service before August 20, 1954, is August 20, 1963. The date for those who left service after August 20, 1954, is nine years from separation or January 31, 1964, whichever comes first.

Only a few World War II disabled still are eligible for vocational rehabilitation, and their terminal date is July 25, 1960.

VA's third new step now permits VA to give job-finding assistance as well as personal counseling to disabled veterans after they have completed their vocational training—if they can't find employment or if there's some personality difficulty standing in their way of getting and holding a job.

Vocational rehabilitation training is available to service-disabled Korea veterans and to some few disabled World War II veterans. Purpose of the training—which may be taken in school, on-the-job or on-the-farm—is to help a disabled veteran prepare for a job he can hold in spite of his handicap.

USES DISABLED

In its 171 hospitals the Veterans Administration is using a large number of disabled persons both in its volunteer program and in its permanent employee needs.

A stroke victim has not missed five years in his work at the Cleveland hospital. Others write letters, read to bed-ridden patients—in fact all kinds of activities that help to crack the loneliness barrier of long-term patients.

We might add that "where there is a will there is a way" and many disabled as well as fully capable persons have found real enjoyment in helping others over some of the rough spots which we have to travel on life's journey.

REACTOR ACQUIRED

The Omaha, Nebraska, Veterans Administration Hospital has acquired a reactor for use in medical research. It will be installed below ground in the basement of the 11-story, 486-bed hospital building.

Here are some of the uses planned for the reactor:

Neutron activation analysis to determine the quantities of cations, anions, metallo-enzymes, toxic and trace elements in blood, tissue and body secretions.

Production of radioisotopes, including those with half-lives too short for shipment from distant sources, for use in tracer, dilution and flow studies; therapeutic applications; and pharmacological and toxicological research.

Research into therapeutic applications, including production of radioactive therapeutic agents, such as antibiotics and tranquilizers, to determine their metabolic fate; and investigation of the use of activated chemicals which are selectively concentrated by tissues.

GI INSURANCE

During 1959 the Veterans Administration will distribute $256,000,000 in policy dividends to more than five million holders of participating GI insurance.

Policyholders may have these dividends held with interest by the agency as a credit to pay the premium or they may direct the VA to use the annual dividends to pay policy premiums ahead of time or they may request cash payment of the dividends.

Another option is open to permanent plan policyholders. They may authorize the VA to hold annual dividends on deposit.

To make any change in dividend options the veteran should write to the VA district office serving his policy, and in the letter be sure to include the number of the policy.

Miscellaneous

PHYSICIANS NEEDED

The Federal Government needs physicians for the United States and foreign countries. Salaries range from $7,510 to $12,770. For further information address the United States Civil Service Commission, Washington 25, D.C.

CERTIFICATION

Over two years ago a program was instituted for certification of qualified sanitary engineers by the American Sanitary Engineering Intersociety Board, Inc.

At present 979 sanitary engineers have been certified by the Board and a number of these are officers in the government services. There are nine Medical Service Corps officers of the Air Force, eight Medical Service Corps officers of the Army, and 86 Sanitary Engineers of the Public Health Service who are members of the American Academy of Sanitary Engineers.

The Secretary of the Board is located at 33 West 39th St., Room 1601, New York 18, N.Y.

PEDIATRIC COURSES

Short Refresher Course will be held by the Children's Hospital of Philadelphia and by the Graduate School of Medicine, University of Pennsylvania as follows: *Pediatric Advances* (May 25-29), *Practical Pediatric Hematology* (June 1-5), *Practical Pediatrics* for physicians of Pennsylvania, New Jersey and Delaware (Mar. 18-June 4).

Further information may be obtained from Irving J. Wolman, M.D., 1740 Bainbridge St., Philadelphia 46, Pa.

FOREIGN DOCTORS IN U S MEDICAL SCHOOLS

There are more than 8,600 foreign-trained physicians on house staffs in U. S. hospitals.

There are 533 schools of medicine in the world.

AWARD ANNOUNCED

The American College of Gastroenterology has announced the establishment of the

Henry G. Rudner, Sr. Award for the best unpublished paper on research in gastroenterology or an allied field.

The prize will be an award of $750.00 plus and additional $250.00 for traveling expenses to present the paper. Entries must be presented no later than 1 June 1959 and should be addressed to the Research Committee of the College, 33 West 60th St., New York 23, N.Y.

GRAND ROUNDS

The eighth in the series of Upjohn *Grand Rounds* closed telecasts will take place from the Washington University School of Medicine, St. Louis on March 18. The subject will be chest disease—medical and surgical. The time will be 9 P.M. EST.

The cities in which the program will be shown are: Atlanta; Bethesda (Md.), Boston, Chicago, Cleveland, Kalamazoo, New York, Philadephia, St. Louis, Syracuse, and Washington.

HEALTH EXHIBIT

New York City will hold its Second Annual Health Exposition in the Coliseum August 5-15.

The Advisory Council, headed by Dr. Morey R. Fields, director of Public Health Education for New York City, expects more exhibits and attractions this year than at the first Health Exposition held in 1958.

Exhibitors are invited to contact the Advisory Council.

CONFERENCE ON ATOM

The first national Youth Conference on the Atom will be held in Atlantic City, N.J., on April 30 and May 1. Some 500 students and teachers from high schools all over the country will participate in the conference.

Further information may be obtained from Electric Companies Public Information, 2 West 45th St., New York 36, N.Y.

MENTAL RETARDATION CONFERENCE

The First International Medical Conference on Mental Retardation will be held at The Eastland Hotel, Portland, Maine, July 27-31. The program lists speakers from Austria, England, France, Germany and the United States. There will be simultaneous interpretation of languages.

Further information may be obtained by writing to Ella Langer, M.D., State House, Augusta, Maine.

MEETING IN CANADA

The American College of Surgeons will hold its first Canadian four-day Sectional Meeting in Montreal, for surgeons and nurses, April 6-9.

Heading the arrangements committees are Dr. Harry S. Morton, 4500 Sherbrooke St. W., Montreal; and Dr. Charles E. Hebert, 3411 rue St. Denis, Montreal 18.

MEETINGS

The American Goiter Association will hold its 1959 meeting at the Drake Hotel, Chicago, April 30, May 1 and 2. Further information may be obtained from the Secretary, 149½ Washington Ave., Albany 10, N.Y.

The American College of Chest Physicians will hold its Silver Anniversary meeting at the Ambassador Hotel, Atlantic City, June 3-7, 1959. Further information may be obtained from the headquarters at 112 E. Chestnut St., Chicago 11, Ill.

The sixth annual meeting of The Society of Nuclear Medicine will be held at the Palmer House, Chicago, Illinois, June 18-20, 1959. Further information may be obtained by writing to Samuel N. Turiel, Administrator of the Society of Nuclear Medicine, 750 North Michigan Ave., Chicago 11, Ill.

The American Physical Therapy Association will hold its 36th Annual Conference at Hotel Leamington in Minneapolis, Minn., June 21-26, 1959. The scientific program is to be centered around the subject of Pain.

Further information may be obtained from the Executive Director of the association at 1790 Broadway, New York 19, N.Y.

The Eighth Congress of the Pan-Pacific Surgical Association will be held in Hono-

lulu, Hawaii, September 28 through October 5, 1960.

For further information write to Dr. F. J. Pinkerton, Suite 230, Alexander Young Building, Honolulu 13, Hawaii.

BOOK AVAILABLE

Handbook for Emergencies is a book that is available from the Office of Civil Defense Mobilization, Washington 25, D.C., for the asking. This book is well worth while to study in preparation for disasters which we all realize do occur at times when we seem to be least prepared for them.

BIBLIOGRAPHY WHO PUBLICATIONS

Publications of the World Health Organization (1947-1957) are listed in *A Bibliography* which can be procured from the Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N.Y., for $3.25.

All publications so listed are available from the same place.

U S GOVERNMENT PUBLICATIONS

	per copy
Surgery in World War II-Neurosurgery, Vol. I and II	$5.00
Cold Injury, Ground Type	6.25
Communicable Diseases-Vol. IV Transmitted through respiratory and alimentary tracts	5.50
Emergency War Surgery, NATO No. D 1.6:Su 7	2.25
Veterans Benefits No Y 4v 64/3:B 43/6	1.00
Safety for the Household No. C 13.4:463	.75
First Aid—Bureau of Mines No. I 28.16:F 51/2/953	.60
Care and Management of Laboratory Animals No. D 101.25:Med 255	.55
Bandaging and Splinting No. D 101.37:41-B-81	.25
What to Know about Drug Addicts No. FS 2.22:D 84/958	.15

Any of above publications may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. (check or money order—no stamps).

AVIATION MEDICINE. Volume 2, 1953 Literature. An Annotated Bibliography by Arnold J. Jacobius, Madeleine J. Wilkins, Ludmila Kassianoff, Rita B. Slie, Sam L. Whitehead of the Bibliography Section, Science and Technology Division, The Library of Congress. Published by the Aero Medical Association, 2642 University Ave., St. Paul 14, Minnesota. Price $5.00.

This 353-page book contains abstracts of 1386 articles on aviation medicine which appeared in the literature of 1953. It is a continuation of the work started in the previous volume one which contained 918 abstracts. Each abstract bears a number and source of material. There are corporate-author, secondary-author and subject indexes covering the contents of the two volumes.

This book represents a huge volume of work of abstracting and will be found to be extremely useful to those engaged in any manner in aviation medicine.

NEW AND NONOFFICIAL DRUGS—1959. Evaluated by A.M.A. Council on Drugs. 687 pages. Published by J. B. Lippincott Company, Philadelphia and Montreal. Price $3.35.

This well known annual publication has added 41 monographs on drugs to its previous list. Eight drugs have been omitted because of their being well known and now being listed in the N.N.D., U.S.P., or N.F. Four drugs have been omitted since they are no longer available.

The 24 chapters of the book group all the drugs according to uses, such as Local Anesthetics, Antihistaminics, etc., down to Vitamins and Miscellaneous agents.

The General Index is available for quickly finding information on any drug described in the book whether listed under its chemical term or trade name.

This is a valuable work compiled with the assistance of many authorities and will remain in high esteem.

Honor Roll

Since the publication of our last list, the following sponsored one or more applicants for membership in the Association:

Lt. Col. Bernard Aabel, MSC, USA
Lt. Col. Vernon H. Coughlan, MC, USAR Ret.
Capt. Clement Roth, MSC, USAR
Maj. Lorenzo Mercado Carvajal, MC, Venezuela Army
Maj. Rose Horvath, ANC, USAR
Brig. Gen. H. H. Twitchell, USAF (MC)
Med. Dir. G. P. Ferrazzanno, USPHS
Maj. Edward A. Barrett, MC, USAR
Dr. James Lieberman
Col. Joseph Blumberg, MC, USA
Lt. Col. Carl J. Schopfer, MC, NG
Col. Robert E. Bitner, USA, Ret.
Dr. Howard Van Natta
Brig. Gen. Elmer M. Young, VC, USA
Col. Amos R. Koontz, MC Md. NG
Dr. Earl Stage
Major Robert H. Saber, MC, USAFR
Col. Arthur H. Corliss, USAF (MC)
Brig. Gen. L. C. Fairbank, USA, Ret.
Dr. George A. Galiber
Col. Robert D. Johnson

Correspondence

THE EDITOR:

May I first express my appreciation for the article ("The Vanishing Medic—An Evaluation") appearing in the December (1958) number of MILITARY MEDICINE by Lt. Col. Samuel McClatchie. The thesis of his article that MC officers do not get sufficient experience in military affairs to function adequately, especially in command responsibilities, is, I believe, much more true in the present Reserve structure than anyone might dare admit. Here, certainly, would be an excellent training ground for rounding out the study of military science by the Medical Officer but such is far from the case.

In my own instance, having had no active duty as a Medical Officer but having served in the Ready Reserve, USAR in that capacity for seven years in a Divisional Unit, I find that I am completely unable to participate in those activities pertinent to my own development in military subjects. This is particularly true during the Annual Unit Training Exercises during which time I am assigned to provide in a professional way, medical care to a large proportion of the division in the operation of a dispensary. Thus, when the company which I command is in the field undergoing training, I must of necessity pass on my duties to MSC officers so that I may run the sick-call, supervise administration of vaccines, and other more mundane duties which are of little benefit to me. This is also true of the experience of many other Medical Officers with whom I have discussed this point, both in the Ready Reserve and National Guard.

No one likes administrative work when he is not given the opportunity to understand and practice it; and I firmly believe that this may be the basic fault responsible for the deficit in Medical Officers which Lt. Col. McClatchie has so lucidly described.

Respectfully,

DELMER E. BATCHELLER
Captain, MC-USAR
Linwood Medical Centre
333 Linwood Avenue
Buffalo 9, N.Y.

Please note: The address of Lt. Colonel Samuel McClatchie was erroneously given as Division Surgeon, 1st Infantry Division, Fort Riley, Kansas. His *correct* address: 9th Field Hospital, Brooke Army Medical Center, Fort Sam Houston, Texas.

1958 Annual Meeting of the Association

THE Annual Meeting of the Association of Military Surgeons was called to order by the President, Colonel Charles R. Mueller, U. S. Army, Retired, who represented the Veterans Administration, at 1:45 P.M., November 18, 1958 at the Statler Hilton Hotel, Washington, D.C.

The Secretary of the Association, Colonel Robert E. Bitner, U. S. Army, Retired, presented his report.

Financial. In accordance with the change in the By-laws of the Association adopted at the 1957 annual meeting which changed the end of the fiscal year to June 30, the financial report submitted is for nine months. Subsequent financial reports will be for the entire fiscal year of twelve months ending June 30 each year.

The General Fund, including common stocks, government and corporate bonds, and the sustaining membership fund	$116,288.95
Convention Fund	4,530.89
Major Louis Livingston Trust Fund	8,281.14
	$129,100.98

It was pointed out by the Secretary that the Convention Fund was a special fund for accounting purposes to handle matters pertaining to the annual conventions of the Association and by keeping a separate account a more accurate cost accounting can be given for each convention.

The Major Louis Livingston Seaman Fund is a Trust Fund established for the prize in his name and can be used only for that purpose. The money was originally used to purchase long term government bonds which are now in the hands of the Association.

While all bills of the Association had been paid there were certain potential liabilities in view of the advance payment of membership dues, obligations to printers for type that had been set for future use in the printing of the official journal and certain obligation for office materials. Although no monetary value had been placed on this by the auditors (Professional Business Management, Inc., Washington, D.C.) it was estimated that the amount would be about $25,000.

Membership. A continued promotion of the Association had been carried on through the year by means of letters, and brochures explaining the purpose of the Association. The membership has held up well although there is no startling gain. Increased attention to membership must be given by the members themselves.

The Journal. MILITARY MEDICINE, the official journal of the Association has been able to increase its number of pages in the past year both from the standpoint of text material and advertising. A new cover design is planned for 1959.

For the past three years the journal has been placed in the libraries of medical, dental, pharmacy and veterinary schools in the United States through the courtesy of the Sustaining Members. It is planned to continue this practice for 1959.

Comment. The Secretary is of the opinion that this past year has been one that the Association has every right to be proud of.

Action was taken on the proposed amendment to change paragraph 2, Section 2 of Article IV of the Constitution of the Association: *Present reading:* "These officers shall hold office until their successors are elected and accept office." *Proposed reading:* "The officers shall be elected yearly at the annual convention of the Association and their term of office shall be during the calendar year immediately succeeding that in which their election takes place. In any case in which successors are not elected to office the incumbents shall hold office until their successors are elected and accept office."

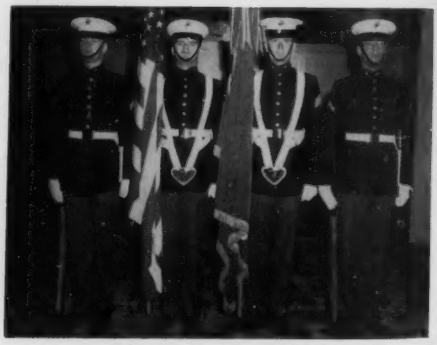
A motion was passed to adopt the proposed change.

The report of the Retirement Fund Board was presented. The treasurer of the retirement fund had been Brigadier General C. M. Walson, U. S. Army, Retired, until July 1, when he was relieved at his own request.

INTERNATIONAL DELEGATES—65TH ANNUAL CONVENTION

SCENES DURING CONVENTION

WREATH LAYING CEREMONY AT ARLINGTON NATIONAL CEMETERY



HONOR GUARD

Brigadier General James McCallam, U. S. Army, Retired, was named as successor.

One person, the former Executive Secretary of the Association, Mr. Stuart Womeldorph, has been drawing retired pay since January 1, 1958.

In order to provide more money for the Retirement Fund a proposed amendment to Section 5 of Article XII of the By-laws was presented: "In order to provide sufficient capital for meeting contingent or expected payments from the Retirement Fund, the Executive Council (a) may at its discretion pay to the Treasurer of the Retirement Fund from the funds of the Association such amounts from time to time as the Council deems suitable, and (b) may at its discretion from time to time change the percentage of the current income of the Association to be set aside for the Retirement Fund, provided said percentage shall not be less than four percent (4%) nor in excess of eight percent (8%)."

The proposal was accepted without discussion and the Secretary was directed to publish it in MILITARY MEDICINE and in accordance with the Constitution and By-laws to present it at the next annual meeting of the Association in November 1959 at which time action shall be taken by the members of the Association.

Mr. Herbert Moyer, representative from the Group Insurance Department for the Association, gave a resume of a report that had been previously submitted to the Association. Continued satisfaction in the settlement of all claims was announced.

The Chairman of the Nominating Committee presented the following slate for officers for 1959:

For President: Brig. Gen. H. H. Twitchell, USAF (MC)

For First Vice-president: Rear Adm. Richard A. Kern, USNR, Ret.

For Second Vice-president: Surg. Gen. Leroy E. Burney, USPHS

For Third Vice-President: Maj. Gen. James P. Cooney, MC, USA

For Fourth Vice-president: Rear Adm. Irwin L. Norman, MC, USN

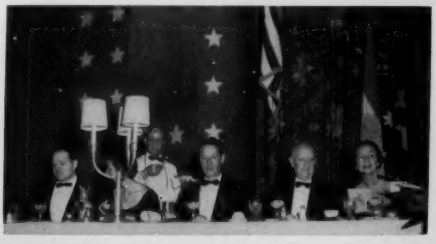
For Fifth Vice-president: Col. Robert C. Kimberly, MC, Md. NG

For Sixth Vice-president: Col. William S. Middleton, MC, USAR

There were no nominations from the floor. Motion was made to adopt the slate as presented by the Nominating Committee.

The meeting was adjourned at 2:25 P.M.

65TH ANNUAL CONVENTION, NOVEMBER 17, 18, 19, 1958



AT THE SPEAKER'S TABLE

NEW BOOKS

Books may be ordered through this Association.

Ciba Foundation Symposium on Amino Acids and Peptides with Antimetabolic Activity, Editors G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch. and Cecilia M. O'Connor, B.Sc., Little, Brown and Co., Boston, Mass. Price $8.75.

Viral and Rickettsial Infections of Man, Edited by Thomas M. Rivers, M.D., and Frank L. Horsfall, Jr., M.D., J. B. Lippincott Company, Philadelphia, Pa. Price $8.50.

New and NonOfficial Drugs 1959, Evaluated by the Council on Drugs of the American Medical Association, J. B. Lippincott Company, Philadelphia, Pa. Price $3.35.

Outline of Fractures Including Joint Injuries, John Crawford Adams, M.D., F.R.C.S., Williams & Wilkins Co., Baltimore, Md. Price $6.50.

Psychiatry in General Practice, J. A. Weijel, M.D. Elsevier Press, Inc., Houston, Texas. Price $7.00.

Vascular Surgery, Geza de Takats, M.D., F.S., F.A.C.S., W. B. Saunders Co., Philadelphia, Pa. Price $17.50.

Long-Term Illness, Management of the Chronically Ill Patient, Edited by Michael G. Wohl, M.D., F.A.C.P., W. B. Saunders Co., Philadelphia, Pa. Price $17.00.

Pulmonary Circulation, An International Symposium, 1958, Sponsored by the Chicago Heart Association, Edited by Wright R. Adams, M.D., and Ilza Veith, Ph.D., Grune and Stratton, New York, N. Y. Price $4.50.

Practical Dermatology, George M. Lewis, M.D., F.A.C.P., W. B. Saunders Company, Philadelphia, Pa. Price $8.00.

Bone Tumors, Louis Lichtenstein, M.D., The C. V. Mosby Co., St. Louis, Missouri. Price $12.00.

Clinical Orthopaedics, No. 12, Edited by Anthony F. DePalma, J. B. Lippincott Co., Philadelphia, Pa. Price $7.50.

Principles of Radiographic Exposure and Processing, Aurthur W. Fuchs, Charles C Thomas, Springfield, Ill. Price $10.50.

Sturgis Standard Code of Parliamentary Procedure, Alice F. Sturgis, McGraw-Hill Book Co., Inc., New York, N. Y. Price $3.50.

Emergency Surgery, Hamilton Bailey, F.R.C.S. (Eng.), F.A.C.S., F.R.S.E., Williams & Wilkins Company, Baltimore, Md. Price $32.50.

Operative Surgery, Progress Volume 1958, General Index, Edited by Charles Rob, MC, M.Chir., F.R.C.S. and Rodney Smith, M.S., F.R.C.S., F. A. Davis Co., Philadelphia, Pa.